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THE

EDINBURGH PRACTICE

OF

PHYSIC, SURGERY,

AND

MIDWIFERY;

PRECEDED BY

AN ABSTRACT OF THE THEORY OF MEDICINE,

AND

THE NOSOLOGY OF DR. CULLEN

AND INCLUDING

UPWARDS OF SIX HUNDRED AUTHENTIC FORMULÆ,

FROM THE BOOKS OF ST. BARTHOLOMEW'S, ST. GEORGE'S, ST. THOMAS'S, GUY'S, AND OTHER HOSPITALS IN LONDON, AND FROM THE LECTURES AND WRITINGS OF THE MOST EMINENT PUBLIC TEACHERS.

With Twenty Quarto Plates.

A NEW EDITION, IN FIVE VOLUMES.

VOL. I.

MEDICINE.

Maxx. Medical College

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PREFACE.

"As experience without theory," says an intelligent medical writer, "will never make a physician, any more than any other art can be acquired without an acquaintance with the rules on which it is founded; and as he that is guided merely by appearances, without being able to reason about their minutest differences, will never see an error till it is past recovery; it will be found by those who impartially examine this question, that true satisfaction is no more to be found in mere experience than in mere hypothesis. If there be any thing of *science* in medicine it is conducted by demonstration, because conversant with objects cognizable only by the evidence of sense; but without this it is chance and confusion, and the enthusiast and the empiric are upon an equal footing. Not that we can pretend to certainty in all instances of practice, because there are more data required for that than the nature of things can admit of; but the theorist will come at more of those data than any other, and in every step he takes will be able to *compute all the chances that are risked on either side of a disputable case;* whereas the empiric and experimenter are *altogether* in uncer-

tainty, having *no rules* to make even obſervation itſelf of real uſe."

That mere directions *how to treat a diſeaſe*, unaccompanied with any preciſe law by which that diſeaſe is governed, or any detail of the variations to which it is ſubject, are not merely uſeleſs but even pernicious, may be eaſily proved by the teſtimony of medical men, who have truſted to the fallacious guidance of thoſe publications which pretend to teach the *practice* of the different branches of the medical art, without paying any material regard to *theory*. It is a conviction of this ſort that has induced the Editor of the following ſheets to avail himſelf of a northern work already, and deſervedly, popular; and, in its preſent detached form, to place it within the reach of every medical ſtudent and practitioner, diveſted of many accidental errors, and enriched by materials drawn from the firſt ſources of medical, chirurgical, and obſtetrical information in South Britain.

Thus, to the excellent compilations of Dr. MONRO and Mr. FYFFE have been added *every ſucceſſive improvement* in medicine and ſurgery; nor has leſs attention been paid to the neceſſary additions to the treatiſe on midwifery, originally the work of an eminent teacher at Edinburgh. Above all it has been the Editor's endeavour to bring together in theſe volumes a body of CASES, truly valuable and authentic; and greatly to augment the FORMULÆ, which ſtamped the former edition with a marked degree of ſuperiority over other publications of the kind: of theſe it may no leſs truly be ſaid, that "none are the

vague productions of obſcure *anonymous pharmacopoliſts*, but ſtamped with the ſtrongeſt poſſible characters of authenticity."

A practice of medicine formed upon the claſſification of Dr. Cullen neceſſarily led to that important appendage the NOSOLOGY; a circumſtance which the reader will not regret, ſince it not only affords him a general ſyſtematic view of all the diſeaſes to which the human body is liable, but ſerves as a kind of nomenclator or index.

The union of the different branches of medical practice in the preſent work, may appear to demand ſome apology; but when it is conſidered that the bulk of the profeſſion (taking the profeſſion collectively) are in the habit of practiſing *all at the ſame time*; that this is univerſally the caſe in the ARMY and NAVY; that no medical man ſhould be *ignorant* of that branch which he does *not* practiſe; and laſtly, that the peculiar nature of ſome diſeaſes renders it impoſſible to decide which of the branches it properly belongs to; we apprehend little can be objected to this part of our ſcheme.

The PLATES, the number of which has been conſiderably augmented, it is hoped, will be found eminently uſeful, particularly to the young practitioner; and the TABLES and copious INDEXES capable of facilitating the reader's purſuits, in a manner that will enſure his decided approbation of the undertaking.

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INTRODUCTION.

MEDICINE is the art of preventing, curing, or alleviating thoſe diſeaſes to which the human ſpecies are ſubject.

The fabulous hiſtory of the ancients derives this art immediately from their gods; and, even among the moderns, ſome are of opinion that it may juſtly be conſidered as of divine revelation. But, without adopting any ſuppoſition of which no probable evidence can be given, we may conclude that mankind were naturally led to it from caſual obſervations on the diſeaſes to which they found themſelves ſubjected; and that therefore, in one ſenſe at leaſt, it is as ancient as the human race. But at what period it began to be practiſed as an art, by particular individuals following it as a profeſſion, is not known. The moſt ancient phyſicians we read of were thoſe who embalmed the patriarch Jacob by order of his ſon Joſeph. The ſacred writer ſtyles theſe phyſicians *ſervants* to Joſeph: whence we may be aſſured that they were not *prieſts*, as the firſt phyſicians are generally ſuppoſed to have been; for in that age we know the Egyptian prieſts were in ſuch high favour, that they retained their liberty, when, through a public calamity, all the reſt of the people were made ſlaves to the prince.

It is not probable, therefore, that, among the Egyptians, religion and medicine were originally conjoined; and if we ſuppoſe the Jews not to have invented the art, but received it from ſome other nation, it is as little probable that the prieſts of that nation were their phyſicians, as thoſe of Egypt.

That the Jewiſh phyſicians were abſolutely diſtinct from their prieſts, is very certain. Yet as the Jews reſided for ſuch a long time in Egypt, it is probable they would retain many of the Egyptian cuſtoms, from which it would be very difficult to free them. We read, however, that when king Aſa was diſeaſed in his feet, "he ſought not to the Lord, but to the phyſicians." Hence we may conclude, that among the Jews, the medicinal art was looked upon as a mere human invention; and it was thought that the Deity never cured diſeaſes by making people acquainted with the virtues of this or that herb, but only by his miraculous power. That the ſame opinion prevailed among the heathens who were neighbours to the Jews, is alſo probable from what we read of Ahaziah king of Judah, who having ſent meſſengers to enquire of

Baal-zebub, god of Ekron, concerning his diſeaſe, he did not deſire any remedy from him or his prieſts, but ſimply to know whether he ſhould recover or not.

What ſeems moſt probable on this ſubject therefore is, that religion and medicine came to be mixed together only in conſequence of that degeneracy into ignorance and ſuperſtition which took place among all nations. The Egyptians, we know, came at laſt to be ſunk in the moſt ridiculous and abſurd ſuperſtition; and then, indeed, it is not wonderful to find their prieſts commencing phyſicians, and mingling charms, incantations, &c. with their remedies. That this was the caſe, though long after the days of Joſeph, we are very certain; and indeed it ſeems as natural for ignorance and barbariſm to combine religion with phyſic, as it is for a civilized and enlightened people to keep them ſeparate. Hence we ſee, that, among all modern barbarians, their prieſts or conjurors are their only phyſicians.

We are ſo little acquainted with the ſtate of phyſic among the Egyptians, that it is needleſs to ſay much concerning them. They attributed the invention of medicine, as they did alſo that of many other arts, to Thoth, the *Hermes* or *Mercury* of the Greeks. He is ſaid to have written many things in hieroglyphic characters upon certain pillars, in order to perpetuate his knowledge, and render it uſeful to others. Theſe were tranſcribed by Agathodemon, or the ſecond Mercury, the father of Tat, who is ſaid to have compoſed books of them, that were kept in the moſt ſacred places of the Egyptian temples. The exiſtence of ſuch a perſon, however, is very dubious, and many of the books aſcribed to him were accounted forgeries as long ago as the days of Galen. There is alſo great reaſon to ſuſpect, that thoſe books were written many ages after Hermes, and when phyſic had made conſiderable advances. Many of the books attributed to him are trifling and ridiculous; and though ſometimes he is allowed to have all the honour of inventing the art, he is, on other occaſions, obliged to ſhare it with Oſiris, Iſis, and Apis, or Serapis.

After all, the Egyptian phyſic appears to have been little elſe than a collection of abſurd ſuperſtitions. Origen informs us, that they believed there were 36 demons, or gods of the air, who divided the human body among them; that they had names for all of them; and that, by invoking them according to the part affected, the patient was cured. Of natural medicines we hear of none recommended by the father of Egyptian phyſic; except the herb *moly*, which he gave to Ulyſſes in order to ſecure him from the enchantments of Circe; and the herb *mercury*, of which he firſt diſcovered the uſe. His ſucceſſors made uſe of veneſection, cathartics, emetics, and clyſters. There is no proof, however, that this practice was eſtabliſhed by Hermes; on the contrary, the Egyptians themſelves pretended, that the firſt hint of thoſe remedies was

taken from ſome obſervations on brute animals. Veneſection was taught them by the hippopotamus, which is ſaid to perform this operation upon itſelf. On theſe occaſions, he comes out of the river, and ſtrikes his leg againſt a ſharp-pointed reed. As he takes care to direct the ſtroke againſt a vein, the conſequence muſt be a conſiderable effuſion of blood; and this being ſuffered to run as long as the creature thinks proper, he at laſt ſtops up the orifice with mud. The hint of clyſters was taken from the ibis, a bird which is ſaid to give itſelf clyſters with its bill, &c. They uſed veneſection, however, but very little, probably on account of the warmth of the climate; and the exhibition of the remedies above mentioned, joined with abſtinence, formed the moſt of their practice.

The Greeks too had ſeveral perſons to whom they attributed the invention of phyſic, particularly Prometheus, Apollo or Pæan, and Æſculapius; which laſt was the moſt celebrated of any. But here we muſt obſerve, that as the Greeks were a very warlike people, their phyſic ſeems to have been little elſe than what is now called *ſurgery*, or the cure of wounds, fractures, &c. Hence Æſculapius, and his pupils Chiron, Machaon, and Podalirius, are celebrated by Homer only for their ſkill in curing theſe, without any mention of their attempting the cures of internal diſeaſes. We are not, however, to ſuppoſe that they confined themſelves entirely to ſurgery. They no doubt would occaſionally preſcribe for internal diſorders; but as they were moſt frequently converſant with wounds, we may naturally ſuppoſe the greateſt part of their ſkill to have conſiſted in knowing how to cure theſe. If we may believe the poets, indeed, the knowledge of medicine ſeems to have been very generally diffuſed. Almoſt all the heroes of antiquity are reported to have been phyſicians as well as warriors. Moſt of them were taught phyſic by the Centaur Chiron. From him Hercules received inſtructions in the medicinal art, in which he is ſaid to have been no leſs expert than in feats of arms. Several plants were called by his name; from whence ſome think it probable that he found out their virtues, though others are of opinion that they bore the name of this renowned hero on account of their great efficacy in removing diſeaſes. Ariſtæus king of Arcadia was alſo one of Chiron's ſcholars, and ſuppoſed to have diſcovered the uſe of the drug called *ſilphium*, by ſome thought to be aſafœtida. Theſeus, Telamon, Jaſon, Peleus, and his ſon Achilles, were all renowned for their knowledge in the art of phyſic. The laſt is ſaid to have diſcovered the uſe of verdigris in cleanſing foul ulcers. All of them, however, ſeem to have been inferior in knowledge to Palamedes, who hindered the plague from coming into the Grecian camp after it had ravaged moſt of the cities of Helleſpont, and even Troy itſelf. His method was to confine his ſoldiers to a ſpare diet, and to oblige them to uſe much exerciſe.

The practice of these ancient Greek physicians, notwithstanding the praises bestowed on them by their poets, seems to have been very limited, and in some cases even pernicious. All the external remedies applied to Homer's wounded heroes were fomentations; while, inwardly, their physicians gave them wine, sometimes mingled with cheese scraped down. A great deal of their physic also consisted in charms, incantations, amulets, &c. of which, as they are common to all superstitious and ignorant nations, it is superfluous to take any farther notice.

In this way the art of medicine continued among the Greeks for many ages. As its first professors knew nothing of the animal economy, and as little of the theory of diseases, it is plain, that whatever they did must have been in consequence of mere random trials, or empiricism, in the most strict and proper sense of the word.

Indeed, it is evidently impossible that this, or almost any other art, could originate from any other source than trials of this kind. Accordingly, we find, that some ancient nations were accustomed to expose their sick in temples, and by the sides of highways, that they might receive the advice of every one who passed. Among the Greeks, however, Æsculapius was reckoned the most eminent practitioner of his time, and his name continued to be revered after his death. He was ranked amongst the gods; and the principal knowledge of the medicinal art remained with his family to the time of Hippocrates, who reckoned himself the seventeenth in a lineal descent from Æsculapius, and who was truly the first who treated of medicine in a regular and rational manner.

Hippocrates, who is supposed to have lived 400 years before the birth of Christ, is the most ancient author whose writings, expressly on the subject of the medical art, are preserved; and he is therefore justly considered as the father of physic. All the accounts which we have prior to this time, if not evidently fabulous, are, at the utmost, highly conjectural. Even the medical knowledge of Pythagoras, so much celebrated as a philosopher, can hardly be considered as resting on any other foundation. But from the time of Hippocrates, medicine, separated from philosophy and religion, seems to have assumed the form of a science, and to have been practised as a profession. It may not, therefore, be improper to give a particular account of the state of medical knowledge as transmitted to us in his writings. The writings of Hippocrates, however, it may be remarked, are even more than preserved. Nor is it wonderful that attempts should have been made to increase the value of manuscripts, by attributing them to a name of such eminence. But although what are transmitted to us under the title of his works may have been written by different hands, yet the presumption is, that most, if not all of them, are of nearly as early a date, and contain the prevailing opinions of those times.

According to the most authentic accounts, Hippocrates was a

native of the iſland of Cos, and born in the beginning of the 88th Olympiad. In the writings tranſmitted to us as his, we find a general principle adopted, to which he gives the name of *Nature*. To this principle he aſcribes a mighty power. "Nature (ſays he) is of itſelf ſufficient to every animal. She performs every thing that is neceſſary to them without needing the leaſt inſtruction from any one how to do it." Upon this footing, as if Nature had been a principle endowed with knowledge, he gives her the title of *juſt*; and aſcribes virtues or powers to her, which are her ſervants, and by means of which ſhe performs all her operations in the bodies of animals; and diſtributes the blood, ſpirits, and heat, through all parts of the body, which, by theſe means, receive life and ſenſation. And in other places he tells us, that it is this faculty which gives nouriſhment, preſervation, and growth, to all things.

The manner in which Nature acts, or commands her ſubſervient power to act, is by attracting what is good and agreeable to each ſpecies, and by retaining, preparing, and changing it; and on the other hand, in rejecting whatever is ſuperfluous or hurtful, after ſhe has ſeparated it from the good. This is the foundation of the doctrine of depuration, concoction, and criſis in fevers, ſo much inſiſted upon by Hippocrates and moſt other phyſicians. He ſuppoſes alſo, that every thing has an inclination to be joined to what agrees with it, and to remove from every thing contrary to it; and likewiſe that there is an affinity between the ſeveral parts of the body, by which they mutually ſympathize with each other. When he comes to explain what this principle called *nature* is, he is obliged to reſolve it into *heat*, which, he ſays, appears to have ſomething immortal in it.

As far as he attempts to explain the cauſes of diſeaſe, he refers much to the humours of the body, particularly to the blood and the bile. He treats alſo of the effects of ſleep, watchings, exerciſe, and reſt; and all the benefit or miſchief we may receive from them. Of all the cauſes of diſeaſes, however, mentioned by Hippocrates, the moſt general are diet and air. On the ſubject of diet he has compoſed ſeveral books, and in the choice of this he was exactly careful; and the more ſo, as his practice turned almoſt wholly upon it. He alſo conſidered the air very much; he examined what winds blew ordinarily or extraordinarily; he conſidered the irregularity of the ſeaſons, the riſing and ſetting of ſtars, or the time of certain conſtellations; alſo the time of the ſolſtices, and of the equinoxes: thoſe days, in his opinion, producing great alterations in certain diſtempers.

He does not, however, pretend to explain how, from theſe cauſes, that variety of diſeaſes ariſes which is daily to be obſerved. All that can be gathered from him with regard to this is, that the different cauſes above mentioned, when applied to the different parts of

the body, produce a great variety of diſorders. Some of theſe he accounted *mortal*, others *dangerous*, and the reſt eaſily *curable*, according to the cauſe from whence they ſpring, and the parts on which they fall. In ſeveral places alſo he diſtinguiſhes diſeaſes, from the time of their duration, into *acute* or *ſhort*, and *chronical* or *long*. He likewiſe diſtinguiſhes diſeaſes by the particular places where they prevail, whether ordinary or extraordinary. The firſt, that is, thoſe that are frequent and familiar to certain places, he called *endemic* diſeaſes; and the latter, which ravaged extraordinarily ſometimes in one place, ſometimes in another, which ſeized great numbers at certain times, he called *epidemic*, that is, *popular* diſeaſes; and of this kind the moſt terrible is the plague. He likewiſe mentions a third kind, the oppoſite of the former; and theſe he calls *ſporadic*, or ſtraggling diſeaſes: theſe laſt include all the different ſorts of diſtempers which invade at any one ſeaſon, which are ſometimes of one ſort, and ſometimes of another. He diſtinguiſhed between thoſe diſeaſes which are hereditary, or born with us, and thoſe which are contracted afterwards; and likewiſe between thoſe of a *kindly* and ſuch as are of a *malignant* nature, the former of which are eaſily and frequently cured, but the latter give the phyſicians a great deal of trouble, and are ſeldom overcome by all their care.

Hippocrates remarked four ſtages in diſeaſes; viz. the beginning of the diſeaſe, its augmentation, its ſtate or height, and its declination. In ſuch diſeaſes as terminate fatally, death comes in place of the declination. In the third ſtage, therefore, the change is moſt conſiderable, as it determines the fate of the ſick perſon; and this is moſt commonly done by means of a *criſis*. By this word he underſtood any ſudden change in ſickneſs, whether for the better or for the worſe, whether health or death ſucceed immediately. Such a change, he ſays, is made at that time by *nature*, either abſolving or condemning the patient. Hence we may conclude, that Hippocrates imagined diſeaſe to be only a diſturbance of the animal economy, with which Nature was perpetually at variance, and uſing her utmoſt endeavours to expel the offending cauſe. Her manner of acting on theſe occaſions is to reduce to their natural ſtate thoſe humours whoſe diſcord occaſions the diſturbance of the whole body, whether in relation to their quantity, quality, mixture, motion, or any other way in which they become offenſive. The principal means employed by nature for this end is what Hippocrates calls *concoction*. By this he underſtood the bringing the morbific matter lodged in the humours to ſuch a ſtate, as to be eaſily fitted for expulſion by whatever means nature might think moſt proper. When matters are brought to this paſs, whatever is ſuperfluous or hurtful immediately expels itſelf, or nature points out to phyſicians the way by which ſuch an evacuation is to be accompliſhed. The criſis takes place either by bleeding, ſtool, vomit,

ſweat, urine, tumors or abſceſſes, ſcabs, pimples, ſpots, &c. But theſe evacuations are not to be looked upon as the effects of a true criſis, unleſs they are in conſiderable quantity; ſmall diſcharges not being ſufficient to make a criſis. On the contrary, ſmall diſcharges are a ſign that Nature is depreſſed by the load of humours, and that ſhe lets them go through weakneſs and continual irritation. What comes forth in this manner is crude, becauſe the diſtemper is yet too ſtrong; and while matters retain this ſtate, nothing but a bad or imperfect criſis is to be expected. This ſhows that the diſtemper triumphs, or at leaſt is equal in ſtrength to nature, which prognoſticates death, or a prolongation of the diſeaſe. In this laſt caſe, however, nature often has an opportunity of attempting a new criſis more happy than the former, after having made freſh efforts to advance the concoction of the humours.—It muſt here be obſerved, however, that according to Hippocrates, concoction cannot be made but in a certain time, as every fruit has a limited time to ripen; for he compares the humours which nature has digeſted to fruits come to maturity.

The time required for concoction depends on the differences among diſtempers mentioned above. In thoſe which Hippocrates calls *very acute*, the digeſtion or criſis happens by the fourth day; in thoſe which are only *acute*, it happens on the 7th, 11th, or 14th day; which laſt is the longeſt period generally allowed by Hippocrates in diſtempers that are truly acute: though in ſome places he ſtretches it to the 20th or 21ſt, nay ſometimes to the 40th or 60th days. All diſeaſes that exceed this laſt term are called *chronical*. And while in thoſe diſeaſes that exceed 14 days he conſiders every fourth day as critical, or at leaſt remarkable, by which we may judge whether the criſis on the following fourth day will be favourable or not; ſo in thoſe which run from 20 to 40 he reckons only the ſeventhſ, and in thoſe that exceed 40 he begins to reckon by 20. Beyond the 120th he thinks that the number of days has no power over the criſes. They are then referred to the general changes of the ſeaſons; ſome terminating about the equinoxes; others about the ſolſtices; others about the riſing or ſetting of the ſtars of certain conſtellations; or if numbers have yet any place, he reckons by months, or even whole years. Thus (he ſays), certain diſeaſes in children have their criſis in the 7th month after their birth, and others in their 7th or even their 14th year.

Though Hippocrates mentions the 21ſt as one of the critical days in acute diſeaſes, as already noticed; yet, in other places of his works, he mentions alſo the 20th. The reaſon he gives for this in one of thoſe places of his works is, that the days of ſickneſs were not quite entire. In general, however, he is much attached to the odd days: inſomuch that in one of his aphoriſms he tells us, "The ſweats that come out upon the 3d, 5th, 7th,

9th, 11th, 14th, 17th, 21ſt, 27th, 31ſt, or 34th days, are beneficial; but thoſe that come out upon other days ſignify that the ſick ſhall be brought low, that his diſeaſe ſhall be very tedious, and that he ſhall be ſubject to relapſes." He further ſays, "That the fever which leaves the ſick upon any but an odd day is uſually apt to relapſe." Sometimes, however, he confeſſes that it is otherwiſe; and he gives an inſtance of a ſalutary criſis happening on the ſixth day. But theſe are very rare inſtances, and therefore cannot, in his opinion, overthrow the general rule.

Beſides the criſis, however, or the change which determines the fate of the patient, Hippocrates often ſpeaks of another, which only changes the ſpecies of the diſtemper, without reſtoring the patient to health; as when a vertigo is turned to an epilepſy, a tertian fever to a quartan, or to a continual, &c.

But what has chiefly contributed to procure the vaſt reſpect generally paid to Hippocrates, is his induſtry in obſerving the moſt minute circumſtances of diſeaſes, and his exactneſs in nicely deſcribing every thing that happened before, and every accident that appeared at the ſame time with them; and likewiſe what appeared to give eaſe, and what to increaſe the malady: which is what we call *writing the hiſtory of a diſeaſe*.—Thus he not only diſtinguiſhed one diſeaſe from another by the ſigns which properly belonged to each; but by comparing the ſame ſort of diſtemper which happened to ſeveral perſons, and the accidents which uſually appeared before and after, he could often foretel a diſeaſe before it came, and afterwards give a right judgment of the event of it. By this way of prognoſticating, he came to be exceedingly admired: and this he carried to ſuch a height, that it may juſtly be ſaid to be his maſter-piece; and Celſus, who lived after him, remarks, that ſucceeding phyſicians, though they found out ſeveral new things relating to the management of diſeaſes, yet were obliged to the writings of Hippocrates for all that they knew of ſigns.

The firſt thing Hippocrates conſidered, when called to a patient, was his looks.—It was a good ſign with him to have a viſage reſembling that of a perſon in health, and the ſame with what the ſick man had before he was attacked by the diſeaſe. As it varied from this, ſo much the greater danger was apprehended. The following is the deſcription which he gives of the looks of a dying man.—"When a patient (ſays he) has his noſe ſharp, his eyes ſunk, his temples hollow, his ears cold and contracted, the ſkin of his forehead tenſe and dry, and the colour of his face tending to a pale-green, or lead colour, one may give out for certain that death is very near at hand; unleſs the ſtrength of the patient has been exhauſted all at once by long watchings, or by a looſeneſs, or being a long time without eating." This obſervation has been confirmed by thoſe of ſucceeding phyſicians, who have, from him, denominated it the *Hippocratic face*. The lips hanging relaxed

and cold, are likewiſe looked upon by this author as a confirmation of the foregoing prognoſtic. He took alſo his ſigns from the diſpoſition of the eyes in particular. When a patient cannot bear the light; when he ſheds tears involuntarily; when, in ſleeping, ſome part of the white of the eye is ſeen, unleſs he uſually ſleeps after that manner, or has a looſeneſs upon him: theſe ſigns, as well as the foregoing ones, prognoſticate danger. The eyes deadened, as it were with a miſt ſpread over them, or their brightneſs loſt, likewiſe preſages death, or great weakneſs. The eyes ſparkling, fierce, and fixed, denote the patient to be delirious, or that he ſoon will be ſeized with a phrenſy. When the patient ſees any thing red, and like ſparks of fire and lightning paſs before his eyes, you may expect an hæmorrhagy; and this often happens before thoſe criſes which are to be attended by a loſs of blood.

The condition of the patient is alſo ſhown by his poſture in bed. If you find him lying on one ſide, his body, neck, legs, and arms, a little contracted, which is the poſture of a man in health, it is a good ſign: on the contrary, if he lies on his back, his arms ſtretched out, and his legs hanging down, it is a ſign of great weakneſs; and particularly when the patient ſlides or lets himſelf fall down towards the feet, it denotes the approach of death. When a patient in a burning fever is continually feeling about with his hands and fingers, and moves them up before his face and eyes as if he was going to take away ſomething that paſſed before them; or on his bed-covering, as if he was picking or ſearching for little ſtraws, or taking away ſome filth, or drawing out little flocks of wool; all this is a ſign that he is delirious, and that he will die. Amongſt the other ſigns of a preſent or approaching delirium he alſo adds this: When a patient who naturally ſpeaks little begins to talk more than he uſed to do, or when one that talks much becomes ſilent, this change is to be reckoned a ſort of delirium, or is a ſign that the patient will ſoon fall into one. The frequent trembling or ſtarting of the tendons of the wriſt, preſage likewiſe a delirium. As to the different ſorts of delirium, Hippocrates is much more afraid of thoſe that run upon mournful ſubjects, than ſuch as are accompanied with mirth.

When a patient breathes faſt, and is oppreſſed, it is a ſign that he is in pain, and that the parts above the diaphragm are inflamed. Breathing long, or when the patient is a great while in taking his breath, ſhows him to be delirious; but eaſy and natural reſpiration is always a good ſign in acute diſeaſes. Hippocrates depended much on reſpiration in making his prognoſtics; and therefore has taken care, in ſeveral places, to deſcribe the different manner of a patient's breathing. Continual watchings in acute diſeaſes, are ſigns of preſent pain, or a delirium near at hand.

Hippocrates alſo drew ſigns from all excrements, whatever they are, that are ſeparated from the body of man. His moſt remark-

able prognoſtics, however, were from the urine. The patient's urine, in his opinion, is beſt when the ſediment is white, ſoft to the touch, and of an equal conſiſtence. If it continue ſo during the courſe of the diſtemper, and till the time of the criſis, the patient is in no danger, and will ſoon be well. This is what Hippocrates called *concocted urine*, or what denotes the concoction of the humours; and he obſerved, that this concoction of the urine ſeldom appeared thoroughly, but on the days of the criſis which happily put an end to the diſtemper. "We ought (ſaid Hippocrates) to compare the urine with the purulent matter which runs from ulcers. As the pus, which is white, and of the ſame quality with the ſediment of the urine we are now ſpeaking of, is a ſign that the ulcer is on the point of cloſing; ſo that which is clear, and of another colour than white, and of an ill ſmell, is a ſign that the ulcer is virulent, and in the ſame manner difficult to be cured: the urines that are like this we have deſcribed, are only thoſe which may be named good; all the reſt are ill, and differ from one another only in the degrees of more and leſs. The firſt never appear but when nature has overcome the diſeaſe; and are a ſign of the concoction of humours, without which you cannot hope for a certain cure. On the contrary, the laſt are made as long as the crudity remains, and the humours continue unconcocted. Among the urines of this laſt ſort, the beſt are reddiſh, with a ſediment that is ſoft, and of an equal conſiſtence; which denotes, that the diſeaſe will be ſomewhat tedious, but without danger. The worſt are thoſe which are very red, and at the ſame time clear and without ſediment; or that are muddy and troubled in the making. In urine there is often a ſort of cloud hanging in the veſſel in which it is received; the higher this riſes, or the farther diſtant it is from the bottom, or the more different from the colour of the laudable ſediment above mentioned, the more there is of crudity. That which is yellow, or of a ſandy-colour, denotes abundance of bile; that which is black is the worſt, eſpecially if it has an ill ſmell, and is either altogether muddy or altogether clear. That whoſe ſediment is like large ground wheat, or little flakes or ſcales ſpread one upon another, or bran, preſages ill, eſpecially the laſt. The fat or oil that ſometimes ſwims upon the top of the urine, and appears in a form ſomething like a ſpider's web, is a ſign of a conſumption of the fleſh and ſolid parts. The making of a great quantity of urine is the ſign of a criſis, and ſometimes the quality of it ſhows how the bladder is affected. We muſt alſo obſerve, that Hippocrates compared the ſtate of the tongue with the urine; that is to ſay, when the tongue was yellow, and charged with bile, the urine, he knew, muſt of courſe be of the ſame colour; and when the tongue was red and moiſt, the urine was of its natural colour.

His prognoſtics from the excretions by ſtool are as follow. Thoſe that are ſoft, yellowiſh, of ſome conſiſtence, and not of an extraor-

dinary ill ſmell, that anſwer to the quantity of what is taken inwardly, and that are voided at the uſual hours, are the beſt of all. They ought alſo to be of a thicker conſiſtence when the diſtemper is near the criſis; and it ought to be taken for a good prognoſtic, when ſome worms, round and long, are evacuated at the ſame time with them. The prognoſis, however, may ſtill be favourable, though the matter excreted be thin and liquid, provided it make not too much noiſe in coming out, and the evacuation be not in a ſmall quantity nor too often; nor in ſo great abundance, nor ſo often, as to make the patient faint. All matter that is watery, white, of a pale green, or red, or frothy and viſcous, is bad. That which is blackiſh, or of a livid hue, is the moſt pernicious. That which is pure black, and nothing elſe but a diſcharge of black bile, always prognoſticates very ill; this humour, from what part ſoever it comes, ſhowing the ill diſpoſition of the inteſtines. The matter that is of ſeveral different colours, denotes the length of the diſtemper; and, at the ſame time, that it may be of dangerous conſequence. Hippocrates places in the ſame claſs the matter that is bilious or yellow, and mixed with blood, or green and black, or like the dregs or ſcrapings of the guts. The ſtools that conſiſt of pure bile, or entirely of phlegm, he alſo looks upon to be very bad.

Matter caſt up by vomiting ought to be mixed with bile and phlegm; where one of theſe humours only is obſerved, it is worſe. That which is black, livid, green, or of the colour of a leek, indicates alarming conſequences. The ſame is to be ſaid of that which ſmells very ill; and if at the ſame time it be livid, death is not far off. The vomiting of blood is very often mortal.

The ſpittings which give eaſe in diſeaſes of the lungs and in pleuriſies, are thoſe that come up readily and without difficulty; and it is good if they be mixed at the beginning with much yellow: but if they appear of the ſame colour, or are red, a great while after the beginning of the diſtemper, are ſalt and acrimonious, and cauſe violent coughings, they are not good. Spittings purely yellow are bad; and thoſe that are white, viſcous, and frothy, give no eaſe. Whiteneſs is a good ſign of concoction in regard to ſpittings; but they ought not at all to be viſcous, nor too thick, nor too clear. We may make the ſame judgment of the excrements of the noſe according to their concoction and crudity. Spittings that are black, green, and red, are of very bad conſequence. In inflammations of the lungs, thoſe that are mixed with bile and blood preſage well if they appear at the beginning, but are bad if they ariſe not about the ſeventh day. But the worſt ſign in theſe diſorders is, when there is no expectoration at all, and the too great quantity of matter that is ready to be diſcharged this way makes a rattling in the breaſt. After ſpitting of blood, the diſcharge of purulent mat-

ter often follows, which brings on a conſumption, and at laſt death.

A kind good ſweat is that which ariſes on the day of the criſis, and is diſcharged in abundance all over the body, and at the ſame time from all parts of the body, and thus carries off the fever. A cold ſweat is alarming, eſpecially in acute fevers, for in others it is only a ſign of long continuance. When the patient ſweats nowhere but on the head and neck, it is a ſign that the diſeaſe will be long and dangerous. A gentle ſweat in ſome particular part, of the head and breaſt for inſtance, gives no relief, but denotes the ſeat of the diſtemper, or the weakneſs of the part. This kind of ſweat was called by Hippocrates *epidroſis*.

The hypochondria, or the abdomen in general, ought always to be ſoft and even, as well on the right ſide as on the left. When there is any hardneſs or unevenneſs in thoſe parts, or heat and ſwellings, or when the patient cannot endure to have it touched, it is a ſign the inteſtines are indiſpoſed.

Hippocrates alſo inquired into the ſtate of the pulſe, or the beating of the arteries. The moſt ancient phyſicians, however, and even Hippocrates himſelf, for a long time, by this word underſtood the violent pulſation that is felt in an inflamed part, without putting the fingers to it.

It is obſerved by Galen, and other phyſicians, that Hippocrates touches on the ſubject of the pulſe more ſlightly than any other on which he treats. But that our celebrated phyſician underſtood ſomething even on this ſubject, is eaſily gathered from ſeveral paſſages in his writings; as when he obſerves, that in acute fevers the pulſe is very quick and very great; and when he makes mention, in the ſame place, of trembling pulſes, and thoſe that beat ſlowly; when he obſerves, that in ſome diſeaſes incident to women, when the pulſe ſtrikes the finger faintly, and in a languiſhing manner, it is a ſign of approaching death. He remarks alſo, in the *Coacæ Prænotiones*, that he whoſe vein, that is to ſay, whoſe artery of the elbow, beats, is juſt going to run mad; or elſe that the perſon is at that time very much under the influence of anger.

From this account of Hippocrates, it will appear, that he was not near ſo much taken up with reaſoning on the phenomena of diſeaſes, as with reporting them. He was content to obſerve theſe phenomena accurately, to diſtinguiſh diſeaſes by them, and judged of the event by comparing them exactly together. For his ſkill in prognoſtics he was indeed very remarkable, as we have already mentioned, inſomuch that he and his pupils were looked upon by the vulgar as prophets. What adds very much to his reputation is, that he lived in an age when phyſic was altogether buried in ſuperſtition, and yet he did not ſuffer himſelf to be carried away by it: on the contrary, on many occaſions, he expreſſes his abhorrence of it.

Having thus ſeen in what Hippocrates makes the difference between health and ſickneſs to conſiſt, and likewiſe the moſt remarkable ſigns from whence he drew his prognoſtics, we muſt now conſider the means he preſcribed for the preſervation of health, and the cure of diſeaſes. One of his principal maxims was this, That, to preſerve health, we ought not to overcharge ourſelves with much eating, nor neglect the uſe of exerciſe and labour. In the next place, That we ought by no means to accuſtom ourſelves to too nice and exact a method of living; becauſe thoſe who have once begun to act by this rule, if they vary in the leaſt from it, find themſelves very ill; which does not happen to thoſe who take a little more liberty, and live ſomewhat more irregularly. Notwithſtanding this, he does not neglect to inquire diligently into what thoſe who were in health uſed for food in his time. Here we cannot help taking notice of the prodigious diſparity between the delicacy of the people in our days and thoſe of Hippocrates: for he takes great pains to tell the difference between the fleſh of a dog, a fox, a horſe, and an aſs; which he would not have done if at that time they had not been uſed for victuals, at leaſt by the common people. Beſides theſe, however, Hippocrates ſpeaks of all other kinds of proviſion that are now in uſe; for example, ſallads, milk, whey, cheeſe, fleſh, as well of birds as of four-footed beaſts, freſh and ſalt fiſh, eggs, all kinds of pulſe, and the different kinds of grain we feed on, as well as the different ſorts of bread that are made of it. He alſo ſpeaks very often of a ſort of liquid food, or broth, made of barley-meal, or ſome other grain, which they ſteeped for ſome time, and then boiled in water. With regard to drink, he takes a great deal of pains to diſtinguiſh the good waters from the bad. The beſt, in his opinion, ought to be clear, light, without ſmell or taſte, and taken out of the fountains that turn towards the eaſt. The ſalt-waters, thoſe that he calls hard, and thoſe that riſe out of fenny ground, are the worſt of all; he condemns alſo thoſe that come from melted ſnow. But though Hippocrates makes all theſe diſtinctions, he adviſes thoſe who are in health to drink of the firſt water that comes in their way. He ſpeaks alſo of alum waters, and thoſe that are hot; but does not enlarge upon their qualities. He adviſes to mix wine with an equal quantity of water: and this (he ſays) is the juſt proportion; by uſing which the wine will expel what is hurtful to the body, and the water will ſerve to temper the acrimony of the humours.

For thoſe that are in health, and likewiſe for ſuch as are ſick, Hippocrates adviſes exerciſe. The books, however, which treat on this ſubject, M. Le Clerc conjectures to have been written by Herodicus, who firſt introduced gymnaſtic exerciſe into medicine, and who is ſaid, by Hippocrates himſelf, to have killed ſeveral people by forcing them to walk while they were afflicted with fevers and other inflammatory diſorders. The advices given in them conſiſt

moſtly in directions for the times in which we ought to walk, and and the condition we ought to be in before it; when we ought to walk ſlowly, and when to run, &c.; and all this with reſpect to different ages and temperaments, and with deſign to bring the body down, or diſſipate the humours. Wreſtling, although a violent exerciſe, is numbered with the reſt. In the ſame place alſo mention is made of a play of the hands and fingers, which was thought good for health, and called *chiromie*; and of another diverſion which was performed round a ſort of ball hung up, which they called *corycus*, and which they ſtruck forward with both their hands.

With regard to thoſe things which ought to be ſeparated from, or retained in the human body, Hippocrates obſerves, that people ought to take great care not to load themſelves with excrements, or keep them in too long; and beſides the exerciſe above mentioned, which carries off one part of them, and which he preſcribed chiefly on this account, he adviſes people to excite and rouſe up Nature, when ſhe flagged and did not endeavour to expel the reſt, or take care of the impediments by which ſhe was reſiſted. For this reaſon he preſcribed meats proper for looſening the belly; and when theſe were not ſufficient, he directed the uſe of clyſters and ſuppoſitories. For thin and emaciated perſons he directed clyſters compoſed only of milk and oily unctuous ſubſtances, which they mixed with a decoction of chick-peaſe; but for ſuch as were plethoric, they only made uſe of ſalt, or ſea, water.

As a preſervative againſt diſtempers, Hippocrates alſo adviſed the uſe of vomits, which he directed to be taken once or twice a month during the time of winter and ſpring. The moſt ſimple of theſe were made of a decoction of hyſſop, with an addition of a little vinegar and ſalt. He made thoſe that were of a ſtrong and vigorous conſtitution take this liquor in a morning faſting; but ſuch as were thin and weakly took it after ſupper.—Venery, in his opinion, is wholeſome, provided people conſult their ſtrength, and do not purſue it to exceſs; which he finds fault with on all occaſions, and would have exceſs avoided alſo in relation to ſleep and watching. In his writings are likewiſe to be found ſeveral remarks concerning good and bad air; and he makes it appear that the good or bad diſpoſition of this element does not depend ſolely on the difference of the climate, but on the ſituation of every place in particular. He ſpeaks alſo of the good and bad effects of the paſſions, and recommends moderation in regard to them.

From what we have already related concerning the opinions of Hippocrates, it may naturally be concluded, that, for the moſt part, he would be contented with obſerving what the ſtrength of nature is able to accompliſh without being aſſiſted by the phyſician. That this was really the caſe, may be eaſily perceived from a peruſal of his books entitled, "Of epidemical diſtempers;" which

are, as it were, journals of the practice of Hippocrates: for there we find him often doing nothing more than describing the symptoms of a disease, and informing us what has happened to the patient day after day, even to his death or recovery; without speaking a word of any kind of remedy. Sometimes, however, he did indeed make use of remedies; but these were exceedingly simple and few, in comparison of what have been given by succeeding practitioners. These remedies we shall presently consider, after we have given an abridgement of the principal maxims on which his practice is founded.

Hipprocrates asserted in the first place, that contraries, or opposites, are the remedies for each other; and this maxim he explains by an aphorism; in which he says, that evacuations cure those distempers which come from repletion, and repletion those that are caused by evacuation. So heat is destroyed by cold, and cold by heat, &c. In the second place, he asserted, that physic is an addition of what is wanting, and a subtraction or retrenchment of what is superfluous: an axiom which is explained by this, viz. that there are some juices or humours, which in particular cases ought to be evacuated, or driven out of the body, or dried up; and some others which ought to be restored to the body, or caused to be produced there again. As to the method to be taken for this addition or retrenchment, he gives this general caution, that you ought to be careful how you fill up, or evacuate, all at once, or too quickly, or too much; and that it is equally dangerous to heat or cool again on a sudden; or rather, you ought not to do it: every thing that runs to an excess being an enemy to nature. In the fourth place, Hippocrates allowed that we ought sometimes to dilate, and sometimes to lock up: to dilate, or open the passages by which the humours are voided naturally, when they are not sufficiently opened, or when they are closed; and, on the contrary, to lock up or straiten the passages that are relaxed, when the juices that pass there ought not to pass, or when they pass in too great quantity. He adds, that we ought sometimes to smooth, and sometimes to make rough; sometimes to harden, and sometimes to soften again; sometimes to make more fine or supple, sometimes to thicken; sometimes to rouse up, and at other times to stupify or take away the sense: all in relation to the solid parts of the body, or to the humours. He gives also this farther lesson, That we ought to have regard to the course the humours take; from whence they come, and whither they go; and in consequence of that, when they go where they ought not, that we make them take a turn about, or carry them another way, almost like the turning the course of a river: or, upon other occasions, that we endeavour if possible to recal, or make the same humours return back again; drawing upward such as have a tendency downward,

and drawing downward such as tend upward. We ought also to carry off, by convenient ways, that which is necessary to be carried off; and not let the humours once evacuated enter into the vessels again. Hippocrates gives also the following instruction, That when we do any thing according to reason, though the success be not answerable, we ought not too easily, or too hastily, to alter the manner of acting, as long as the reasons for it are yet good. But as this maxim might sometimes prove deceitful, he gives the following as a corrector to it: "We ought (says he) to mind with a great deal of attention, what gives ease, and what creates pain; what is easily supported, and what cannot be endured." We ought not to do any thing rashly; but ought often to pause, or wait, without doing any thing: by this way, if you do the patient no good, you will at least do him no hurt.

These are the principal and most general maxims of the practice of Hippocrates, and which proceed upon the supposition laid down at the beginning, viz. that nature cures diseases. We next proceed to consider particularly the remedies employed by him, which will serve to give us further instructions concerning his practice.

Diet was the first, the principal, and often the only remedy made use of by this great physician to answer the greatest part of the intentions above mentioned: by means of it he opposed moist to dry, hot to cold, &c.; and what he looked upon to be the most considerable point was, that thus he supported Nature, and assisted her to overcome the malady. The dietetic part of medicine was so much the invention of Hippocrates himself, that he was very desirous to be accounted the author of it; and the better to make it appear that it was a new remedy in his days, he says expressly, that the ancients had wrote almost nothing concerning the diet of the sick, having omitted this point, though it was one of the most essential parts of the art.

The diet prescribed by Hippocrates for patients labouring under acute distempers, differed from that which he ordered for those afflicted with chronical ones. In the former, which require a more particular exactness in relation to diet, he preferred liquid food to that which was solid, especially in fevers. For these he used a sort of broth made of cleansed barley; and to this he gave the name of *ptisan*. The manner in which the ancients prepared a ptisan was as follows: They first steeped the barley in water till it was plumped up; and afterwards they dried it in the sun, and beat it to take off the husk. They next ground it; and having let the flour boil a long time in the water, they put it out into the sun, and when it was dry they pressed it close. It is properly this flour so prepared that is called *ptisan*. They did almost the same thing with wheat, rice, lentils, and other grain:

but they gave these ptisans the name of the grain from whence they were extracted, as *ptisan of lentils*, *rice*, &c. whereas the ptisan of barley was called simply *ptisan*, on account of the excellence of it. When they wanted to use it, they boiled one part of it in 10 or 15 of water; and when it began to grow plump in boiling, they added a little vinegar, and a very small quantity of anise or leek, to keep it from clogging or filling the stomach with wind. Hippocrates prescribes this broth for women that have pains in their belly after delivery. "Boil some of this ptisan (says he), with some leek, and the fat of a goat, and give it to the woman in bed." This will not be thought very singular, if we reflect on what has been hinted above concerning the indelicate manner of living in those times. He preferred the ptisan to all other food in fevers, because it softened and moistened much, and was besides of easy digestion. If he was concerned in a continual fever, he would have the patient begin with a ptisan of a pretty thick consistence, and go on by little and little, lessening the quantity of barley-flour as the height of the distemper approached; so that he did not feed the patient but with what he called the *juice of the ptisan*; that is, the ptisan strained, where there was but very little of the flour remaining, in order that Nature being discharged in part from the care of digesting the aliments, she might the more easily hold out to the end, and overcome the distemper, or the cause of it. With regard to the quantity, he caused the ptisan to be taken twice a-day by such patients as in health used to take two meals a-day, not thinking it convenient that those who were sick should eat oftener than when they were well. He also would not allow eating twice a-day to those who eat but once in that time when in health. In the paroxysm of a fever he gave nothing at all; and in all diseases where there are exacerbations, he forbad nourishment while the exacerbations continued. He let children eat more; but those who were grown up to man's estate, or were of an advanced age, less; making allowance, however, for the custom of each particular person, or for that of the country.

But though he was of opinion that too much food ought not to be allowed to the sick, he was not of the mind of some physicians who prescribed long abstinence, especially in the beginning of fevers. The reason he gave for this was, that the contrary practice weakened the patients too much during the first days of the disorder, by which means their physicians were obliged to allow them more food when the illness was at its height, which in his opinion was improper. Besides, in acute diseases, and particularly in fevers, Hippocrates made choice of refreshing and moistening nourishment; and amongst other things prescribed orange, melon, spinach, gourd, and dock. This sort of food he

gave to those that were in a condition to eat, or could take something more than a ptisan.

The drink he commonly gave to his patients was made of eight parts of water and one of honey. In some distempers they added a little vinegar; but besides these, they had another sort named κυκεων, or *mixture*. One prescription of this sort we find intended for a consumptive person; it consisted of rue, anise, celery, coriander, juice of pomegranate, the roughest red wine, water, flour of wheat and barley, with old cheese made of goats' milk. Hippocrates did not approve of giving plain water to the sick; but though he generally prescribed the drinks above mentioned, he did not absolutely forbid the use of wine, even in acute disorders and fevers, provided the patient were not delirious nor had pains in the head. Besides, he took care to distinguish the wines proper in these cases; preferring to all other sorts white-wine that is clear and has a great deal of water, with neither sweetness nor flavour.

These are the most remarkable particulars concerning the diet prescribed by Hippocrates in acute diseases: in chronical ones he made very much use of milk and whey; though we are not certain whether this was done on account of the nourishment expected from them, or that he accounted them medicines.

There are many diseases for which he judged the bath was a proper remedy; and he takes notice of all the circumstances that are necessary in order to make the patient receive benefit from it, among which the following are the principal. The patient that bathes himself must remain still and quiet in his place, without speaking, while the assistants throw water over his head or are wiping him dry; for which last purpose he desired them to keep sponges, instead of that instrument called by the ancients *strigil*, which served to rub off from the skin the dirt and nastiness left upon it by the unguents and oils with which they anointed themselves. He must also take care not to catch cold; and must not bathe immediately after eating and drinking, nor eat or drink immediately after coming out of the bath. Regard must also be had whether the patient has been accustomed to bathe while in health, and whether he has been benefited or hurt by it. Lastly, he must abstain from the bath when the body is too open, or too costive, or when he is too weak; or if he has an inclination to vomit, a great loss of appetite, or bleed at the nose. The advantage of the bath, according to Hippocrates, consists in moistening and refreshing, taking away weariness, making the skin soft and the joints pliant; in provoking urine, making the nostrils open, and opening the other excretories. He allows two baths in a day to those who have been accustomed to it in health.

In chronical diseases Hippocrates approved very much of

exercise, though he did not allow it in acute ones: but even in these he did not think that a patient ought always to lie a-bed; but tells us, that "we must sometimes push the timorous out of bed, and rouse up the lazy."

When he found that diet and exercise were not sufficient to ease nature of a burden of corrupted humours, he was obliged to make use of other means, of which *purgation* was one. By this word he understood all the contrivances that are made use of to discharge the stomach and bowels; though it commonly signifies only the evacuation of the belly by stool. This evacuation he imagined to be occasioned by the purgative medicines attracting the humours to themselves. When first taken into the body, he thought they attracted that humour which was most similar to them, and then the others, one after another.—Most of the purgatives used in his time were emetics also, or at least were very violent in their operation downwards. These were the white and black hellebore; the first of which is now reckoned among the poisons. He used also the Cnidian berries, which are nothing else but the seeds of thymelea or chamælea; cneorum peplium, which is a sort of milk-thistle; thapsia; the juice of hippophaë, a sort of rhamnus; elaterium, or juice of the wild cucumber; flowers of brass, coloquintida, scammony, the magnesian stone, &c.

As these purgatives were all very strong, Hippocrates was extremely cautious in their exhibition. He did not prescribe them in the dog-days; nor did he ever purge women with child, and very seldom children or old people. He principally used purgatives in chronical disorders; but was much more wary in acute ones. In his books entitled "Of Epidemical Distempers," there are very few patients mentioned to whom he gave purgative medicines. He also takes notice expressly, that these medicines having been given in cases of the distempers of which he was treating, had produced very bad effects. We are not, however, from this to conclude, that Hippocrates absolutely condemned purging in acute diseases; for in some places he expressly mentions his having given them with success. He was of opinion, for instance, that purging was good in a pleurisy when the pain was seated below the diaphragm; and in this case he gave black hellebore, or some peplium mixed with the juice of *laserpitium*, which is supposed to have been our asafœtida.

The principal rule Hippocrates gives with relation to purging is, that we ought only to purge off the humours that are concocted, and not those that are yet crude, taking particular care not to do it at the beginning of the distemper, lest the humours should be disturbed or stirred up, which happens pretty often. He was not, however, the first who remarked that it would be of ill consequence to stir the humours in the beginning of an acute distemper.

The Egyptian phyſicians had before obſerved the ſame thing. By the *beginning* of a diſtemper, Hippocrates underſtood all the time from the firſt day to the fourth complete.

Hippocrates imagined that each purgative medicine was adapted to the carrying off ſome particular humour; and hence the diſtinction of purgatives into hydragogue, cholagogue, &c. which is now juſtly exploded. In conſequence of this notion, which prevailed long after his time, he pretended that we knew if a purgative had drawn from the body what was fit to be evacuated according as we found ourſelves well or ill upon it. If we found ourſelves well, it was a ſign that the medicine had effectually expelled the offending humour. On the contrary, if we were ill, he imagined, whatever quantity of humour came away, that the humour which cauſed the illneſs ſtill remained; not judging of the goodneſs or badneſs of a purge by the quantity of matters that were voided by it, but by their quality and the effect that followed after it.

Vomits were alſo pretty much uſed as medicines by Hippocrates. We have already ſeen what thoſe were which he preſcribed to people in health by way of preventives. With regard to the ſick, he ſometimes adviſed them to the ſame, when his intentions were only to cleanſe the ſtomach. But when he had a mind to recal the humours, as he termed it, from the inmoſt receſſes of the body, he made uſe of briſker remedies. Among theſe was white hellebore; and this indeed he moſt frequently uſed to excite vomiting. He gave this root particularly to melancholy and mad people; and from the great uſe made of it in theſe caſes by Hippocrates and other ancient phyſicians, the phraſe *to have need of hellebore*, became a proverbial expreſſion for being out of one's ſenſes. He gave it alſo in defluxions, which come, according to him, from the brain, and throw themſelves on the noſtrils or ears, or fill the mouth with ſaliva, or that cauſe ſtubborn pains in the head, and a wearineſs or an extraordinary heavineſs, or a weakneſs of the knees, or a ſwelling all over the body. He gave it to conſumptive perſons in broth of lentils, to ſuch as were afflicted with the dropſy called *leucophlegmatia*, and in other chronical diſorders. But we do not find that he made uſe of it in acute diſtempers, except in the cholera morbus, where he ſays he preſcribed it with benefit. Some took this medicine faſting; but moſt took it after ſupper, as was commonly practiſed with regard to vomits taken by way of prevention. The reaſon why he gave this medicine moſt commonly after eating was, that by mixing with the aliments, its acrimony might be ſomewhat abated, and it might operate with leſs violence on the membranes of the ſtomach. With the ſame intention alſo he ſometimes gave a plant called *ſeſamoides*, and ſometimes mixed it with hellebore.

Laſtly, in certain caſes he gave what he called *ſoft* or *ſweet* hellebore. This term had ſome relation to the quality of the hellebore, or perhaps to the quantity he gave of it.

When Hippocrates intended only to keep the body open, or evacuate the contents of the inteſtines, he made uſe of ſimples; as for example, the herb mercury, or cabbage; the juice or decoction of which he ordered to be drank. For the ſame purpoſe he uſed whey, and alſo cows and aſſes milk; adding a little ſalt to it, and ſometimes letting it boil a little. If he gave aſſes milk alone, he cauſed a great quantity of it to be taken, ſo that it muſt of neceſſity looſen the body. In one place he preſcribes no leſs than nine pounds of it to be taken as a laxative, but does not ſpecify the time in which it was to be taken. With the ſame intention he made uſe of ſuppoſitories and clyſters. The former were compounded of honey, the juice of the herb mercury, of nitre, powder of colocynth, and other ſharp ingredients, to irritate the anus. Theſe they formed into a ball, or into a long cylindrical maſs like a finger. The clyſters he made uſe of for ſick people were ſometimes the ſame with thoſe already mentioned as preventives for people in health. At other times he mixed the decoction of herbs with nitre, honey, and oil, or other ingredients, according as he imagined he could by that means attract, waſh, irritate, or ſoften. The quantity of liquor he ordered was about 36 ounces; from which it is probable he did not intend that it ſhould all be uſed at one time.

On ſome occaſions Hippocrates propoſed to purge the head alone. This practice he employed, after purging the reſt of the body, in an apoplexy, inveterate pains of the head, a certain ſort of jaundice, a conſumption, and the greateſt part of chronical diſeaſes. For that purpoſe he made uſe of the juices of ſeveral plants, as celery; to which he ſometimes added aromatic drugs, making the patients ſnuff up this mixture into their noſtrils. He uſed alſo powders compounded of myrrh, the flowers of braſs, and white hellebore, which he cauſed them to put up into the noſe, to make them ſneeze, and to draw the phlegm from the brain. For the ſame purpoſe alſo he uſed what he calls *tetraganon*, that is, "ſomething having four angles;" but what this was, is now altogether unknown, and was ſo even in the days of Galen. The latter phyſician, however, conjectures it to be antimony, or certain flakes found in it.

In the diſtemper called *empyema* (or a collection of matter in the breaſt), he made uſe of a very rough medicine. He commanded the patient to draw in his tongue as much as he was able; and when that was done, he endeavoured to put into the hollow of the lungs a liquor that irritated the part, which, raiſing a violent cough, forced the lungs to diſcharge the purulent matter contained in them. The materials that he uſed for this purpoſe were of

different ſorts; ſometimes he took the root of arum, which he ordered to be boiled with a little ſalt, in a ſufficient quantity of water and oil; diſſolving a little honey in it. At other times, when he intended to purge more ſtrongly, he took the flowers of copper and hellebore; after that he ſhook the patient violently by the ſhoulders, the better to looſen the pus. This remedy, according to Galen, he received from the Cnidian phyſicians; and it has never been uſed by the ſucceeding ones, probably becauſe the patients could not ſuffer it.

Blood-letting was another method of evacuation pretty much uſed by Hippocrates. Another aim he had in this, beſides the mere evacuation, was to divert or recal the courſe of the blood when he imagined it was going where it ought not. A third end of bleeding was to procure a free motion of the blood and ſpirits, as we may gather from the following paſſage: "When any one becomes ſpeechleſs of a ſudden (ſays he), it is cauſed by the ſhutting of the veins, eſpecially when it happens to perſons otherwiſe in good health, without any outward violence. In this caſe the inward vein of the right-arm muſt be opened, and more or leſs blood taken away, according to the age or conſtitution of the patient. Thoſe that loſe their ſpeech thus have great fluſhings in their face, their eyes are ſtiff, their arms are diſtended, their teeth gnaſh, they have palpitations of the arteries, cannot open their jaws, the extremities are cold, and the ſpirits are intercepted in the veins. If pain enſues, it is by the acceſſion of the black bile and ſharp humours. For the internal parts being vellicated or irritated by theſe humours, ſuffer very much; and the veins, being alſo irritated and dried, diſtend themſelves extraordinarily, and are inflamed, and draw all that can flow to them; ſo that the blood corrupting, and the ſpirits not being able to paſs through the blood by their ordinary paſſages, the parts grow cold by reaſon of this ſtagnation of the ſpirits. Hence come giddineſs, loſs of ſpeech, and convulſions, if this diſorder reaches to the heart, the liver, or to the great veins. From hence ariſe alſo epilepſies and palſies, if the defluxions fall upon the parts laſt mentioned; and that they dry up, becauſe the ſpirits are denied a paſſage through them. In this caſe, after fomentation, a vein muſt be opened, while the ſpirits and humours are yet ſuſpended and unſettled."

Hippocrates had alſo a fourth intention for bleeding, and this was refreſhment. So in the iliac paſſion, he orders bleeding in the arm and in the head; to the end, ſays he, that the ſuperior venter, or the breaſt, may ceaſe to be overheated. With regard to this evacuation, his conduct was much the ſame as to purging, in reſpect of time and perſons. We ought, ſays he, to let blood in acute diſeaſes, when they are violent, if the party be luſty and in the flower of his age. We ought alſo to have regard to the time, both in reſpect to the diſeaſe and to the ſeaſon in which we let

blood. He alſo informs us, that blood ought to be let in great pains, and particularly in inflammations. Among theſe he reckons ſuch as fall upon the principal viſcera, as the liver, lungs, and ſpleen, as alſo the quinſey and pleuriſy, if the pain of the latter be above the diaphragm. In theſe caſes he would have the patients blooded till they faint, eſpecially if the pain be very acute; or rather he adviſes that the orifice ſhould not be cloſed till the colour of the blood alters, ſo that from livid it turn red, or from red livid. In a quinſey he blooded in both arms at once. Difficulty of breathing he alſo reckons among the diſeaſes that require bleeding; and he mentions another ſort of inflammation of the lungs, which he calls a ſwelling or tumor of the lungs ariſing from heat; in which caſe he adviſes to bleed in all parts of the body, and directs particularly to the arms, tongue, and noſtrils. To make bleeding the more uſeful in all pains, he directed to open the vein neareſt the part affected; in a pleuriſy he directs to take blood from the arm of the ſide affected; and for the ſame reaſon, in pains of the head, he directs the veins of the noſe and forehead to be opened. When the pain was not urgent, and bleeding was adviſed by way of prevention, he directed the blood to be taken from the parts fartheſt off, with a deſign to divert the blood inſenſibly from the ſeat of pain. The higheſt burning fevers, which ſhow neither ſigns of inflammation nor pain, he does not rank among thoſe diſorders, that require bleeding. On the contrary, he maintains that a fever itſelf is, in ſome caſes, a reaſon againſt bleeding. If any one, ſays he, has an ulcer in the head, he muſt bleed, *unleſs he has a fever*. He ſays further, thoſe that loſe their ſpeech of a ſudden muſt be blooded, unleſs they have a fever. Perhaps he was afraid of bleeding in fevers, becauſe he ſuppoſed that they were produced by the bile and pituita, which grew hot, and afterwards heated the whole body, which is, ſays he, what we call *fever*, and which, in his opinion, cannot well be evacuated by bleeding. In other places alſo he looks upon the preſence or abundance of bile to be an objection to bleeding; and he orders to forbear veneſection even in a pleuriſy, if there be bile.

To this we muſt add, that Hippocrates diſtinguiſhed very particularly between a fever which followed no other diſtemper, but was itſelf the original malady, and a fever which came upon inflammation. In the early ages of phyſic, the firſt were only properly called *fevers:* others took their names from the parts affected; as *pleuriſy*, *peripneumony*, *hepatitis*, *nephritis*, &c. which names ſignify that the pleura, the lungs, the liver, or the kidneys, are diſeaſed, but do not intimate the fever which accompanies the diſeaſe. In this latter ſort of fever Hippocrates conſtantly ordered bleeding, but not in the former. Hence, in his books "Of Epidemic Diſtempers," we find but few directions for bleeding in the acute ones, and particularly in the great number of continual

and burning fevers there treated of. In the firſt and third book we find but one ſingle inſtance of bleeding, and that in a pleuriſy; in which, too, he ſtaid till the eighth day of the diſorder. Galen, however, and moſt other commentators on Hippocrates, are of opinion, that he generally blooded his patients plentifully in the beginning of acute diſorders, though he takes no notice of it in his writings. But had this been the caſe, he would not perhaps have had the opportunity of ſeeing ſo many fevers terminated by criſes, or natural evacuations, which happen of themſelves on certain days. Hippocrates, in fact, laid ſo much weight upon the aſſiſtance of nature and the method of diet, which was his favourite medicine, that he thought if they took care to diet the patients before mentioned, according to rule, they might leave the reſt to nature. Theſe are his principles, from which he never deviates; ſo that his pieces "Of Epidemical Diſeaſes" ſeem to have been compoſed only with an intention to leave to poſterity an exact model of management in purſuance of theſe principles.

With regard to the rules laid down by Hippocrates for bleeding, we muſt further take notice, that in all diſeaſes which had their ſeat above the liver, he blooded in the arm, or in ſome of the upper parts of the body; but for thoſe that were ſituated below it he opened the veins of the foot, ankle, or ham. If the belly was too laxative, and bleeding was at the ſame time thought neceſſary, he ordered the looſeneſs to be ſtopped before bleeding.

Almoſt all theſe inſtances, however, regard ſcarce any thing but acute diſtempers; but we find ſeveral concerning chronical diſeaſes. "A young man complained of great pain his belly, with a rumbling while he was faſting, which ceaſed after eating: this pain and rumbling continuing, his meat did him no good; but, on the contrary, he daily waſted and grew lean. Several medicines, as well purges as vomits, were given him in vain. At length it was reſolved to bleed him by intervals, firſt in one arm and then in the other, till he had ſcarcely any blood left, and by this method he was perfectly cured."

Hippocrates let blood alſo in a dropſy, even in a tympany; and in both caſes he preſcribes bleeding in the arm. In a diſeaſe occaſioned by an overgrown ſpleen, he propoſes bleeding ſeveral times repeated at a vein of the arm which he calls *ſplenetic*; and in a kind of jaundice, he propoſes bleeding under the tongue. On ſome occaſions he took away great quantities of blood, as appears from what we have already obſerved. Sometimes he continued the bleeding till the patient fainted: at other times he would bleed in both arms at once; at others, he did it in ſeveral places of the body, and at ſeveral times. The veins he opened were thoſe of the arm, the hands, the ankles on both ſides, the hams, the forehead, behind the head, the tongue, the noſe, behind the ears, under the breaſts, and thoſe of the arms; beſides which, he burnt others,

and opened ſeveral arteries. He likewiſe uſed cupping-veſſels, with intent to recal or withdraw the humours which fell upon any part. Sometimes he contented himſelf with the bare attraction made by the cupping-veſſels, but ſometimes alſo he made ſcarifications.

When bleeding and purging, which were the principal and moſt general means uſed by Hippocrates for taking off a plethora, proved inſufficient for that purpoſe, he had recourſe to diuretics and ſudorifics. The former were of different ſorts, according to the conſtitution of the perſons: ſometimes baths, and ſometimes ſweet wine, were employed to provoke urine; ſometimes the nouriſhment which we take contributes to it: and amongſt thoſe herbs which are commonly eaten, Hippocrates recommends garlic, leeks, onions, cucumbers, melons, gourds, fennel, and all other things which have a biting taſte and a ſtrong ſmell. With theſe he numbers honey, mixed with water or vinegar, and all ſalt meats. But, on ſome occaſions, he took four cantharides, and pulling off their wings and feet, gave them in wine and honey. Theſe remedies were given in a great number of chronical diſorders after purging, when he thought the blood was overcharged with a ſort of moiſture which he calls *ichor*; or in ſuppreſſion of urine, and when it was made in leſs quantity than it ought. There were alſo ſome caſes in which he would force ſweat as well as urine; but he neither mentions the diſeaſes in which ſudorifics are proper, nor lets us know what medicines are to be uſed for this purpoſe, except in one ſingle paſſage, where he mentions ſweating, by pouring upon the head a great quantity of water till the feet ſweat; that is, till the ſweat diffuſes itſelf over the whole body, running from head to foot. After this he would have them eat boiled meat, and drink pure wine, and being well covered with clothes, lay themſelves down to reſt. The diſeaſe for which he propoſes the abovementioned remedy is a fever; which is not, according to him, produced by bile or pituita, but by mere laſſitude, or ſome other ſimilar cauſe; from whence we may conclude, that he did not approve of ſweating in any other kind of fever.

Other remedies which Hippocrates tells us he made uſe of, were thoſe that purged neither bile nor phlegm, but act by cooling, drying, heating, moiſtening, or by cloſing and thickening, reſolving and diſſipating. Theſe medicines, however, he does not particularly mention; and it is probable they were only ſome particular kinds of food. To theſe he joined *hypnotics*, or ſuch things as procure ſleep; but theſe laſt were uſed very ſeldom, and it is moſt probable, were only different preparations of poppies.

Laſtly, beſides the medicines already mentioned, which acted in a ſenſible manner, Hippocrates made uſe of others called *ſpecifics*; whoſe action he did not underſtand, and for the uſe of which he could give no reaſon beſides his own experience, or that of other phyſicians. Theſe he had learned from his predeceſſors the deſcendants of Æſculapius, who, being *empirics*, did not trou-

ble themſelves about inquiring into the operation of their remedies, provided their patients were cured.

Of the external remedies preſcribed by Hippocrates, fomentations were the chief. Theſe were of two kinds. The one was a ſort of bath, in which the patient ſat in a veſſel full of a decoction of ſimples appropriated to his malady; ſo that the part affected was ſoaked in the decoction. This was chiefly uſed in affections of the womb, of the arms, the bladder, the reins, and generally all the parts below the diaphragm. The ſecond way of fomenting was, to take warm water and put it in a ſkin or bladder, or even into a copper or earthen veſſel, and to apply it to the part affected; as, for example, in a pleuriſy. They uſed likewiſe a large ſponge, which they dipped in the water, or other hot liquor, and ſqueezed out part of the liquor before they applied it. The ſame uſe they made of barley, vetches, or bran, which were boiled in ſome proper liquor, and applied in a linen bag. Theſe are called *moiſt* fomentations. The dry ones were made of ſalt or millet, heated conſiderably, and applied to the part. Another kind of fomentation was the vapour of ſome hot liquor; an inſtance of which we find in his firſt book "Of Womens Diſtempers." He caſt, at ſeveral times, bits of red-hot iron into urine, and, covering up the patient cloſe, cauſed her to receive the ſteam below. His deſign in theſe kinds of fomentations was to warm the part, to reſolve or diſſipate, and draw out the peccant matter, to mollify and aſſuage pain, to open the paſſages, or even to ſhut them, according as the fomentations were emollient or aſtringent.

Fumigations were likewiſe very often uſed by Hippocrates. In the quinſey, he burned hyſſop with ſulphur and pitch, and cauſed the ſmoke to be drawn into the throat by a funnel; and by this means he brought away abundance of phlegm through the mouth and through the noſe. For this purpoſe he took nitre, marjoram, and creſs-ſeeds, which he boiled in water, vinegar, and oil, and, while it was on the fire cauſed the patient to draw in the ſteam by a pipe. In his works we find a great number of fumigants for the diſeaſes of women, to promote the menſtrual flux, to check it, to help conception, and to eaſe pains in the matrix, or the ſuffocation of it. On theſe occaſions he uſed ſuch aromatics as were then known, viz. cinnamon, caſſia, myrrh, and ſeveral odoriferous plants; likewiſe ſome minerals, ſuch as nitre, ſulphur, and pitch, and cauſed them to receive the vapours through a funnel into the uterus.

Gargles, a kind of fomentations for the mouth, were alſo known to Hippocrates. In the quinſey he uſed a gargle made of marjoram, ſavory, celery, mint, and nitre, boiled with water and a little vinegar. When this was ſtrained, they added honey to it, and waſhed their mouths frequently with it.

Oils and ointments were likewiſe much uſed by Hippocrates, with a view to mollify and abate pain, to ripen boils, reſolve tumors, refreſh after wearineſs, make the body ſupple, &c. For this purpoſe, ſometimes pure oil of olives was uſed; ſometimes certain ſimples were infuſed in it, as the leaves of myrtle and roſes; and the latter kind of oil was in much requeſt among the ancients. There were other ſorts of oils ſometimes in uſe, however, which were much more compounded. Hippocrates ſpeaks of one called *ſuſinum*, which was made of the flowers of the iris, of ſome aromatics, and of an ointment of narciſſus made with the flowers of narciſſus and aromatics infuſed in oil. But the moſt compounded of all his ointments was that called *netopum*, which he made particularly for women; and conſiſted, according to Heſychius, of a great number of ingredients. Another ointment, to which he gave the name of *ceratum*, was compoſed of oil and wax. An ointment which he recommends for the ſoftening of a tumor, and the cleanſing of a wound, was made by the following receipt: "Take the quantity of a nut of the marrow or fat of a ſheep, of maſtic or turpentine the quantity of a bean, and as much wax; melt theſe over a fire, with oil of roſes, for a ceratum." Sometimes he added pitch and wax, and, with a ſufficient quantity of oil, made a compoſition ſomewhat more conſiſtent than the former, which he called *cerapiſſus*.

Cataplaſms were a ſort of remedies leſs conſiſtent than the two former. They were made of powders or herbs ſteeped or boiled in water or ſome other liquor, to which ſometimes they added oil. Theſe were uſed with a view to ſoften or reſolve tumors, ripen abſceſſes, &c. though they had alſo cooling cataplaſms made of the leaves of beech or oak, fig or olive trees, boiled in water.

Laſtly, to complete the catalogue of the external remedies uſed by Hippocrates, we ſhall mention a ſort of medicine called *collyrium*. It was compounded of powders, to which was added a ſmall quantity of ſome ointment, or juice of a plant, to make a ſolid or dry maſs; the form of which was long and round, which was kept for uſe. Another compoſition of much the ſame nature was a ſort of lozenge of the bigneſs of a ſmall piece of money, which was burnt upon coals for a perfume, and powdered for particular uſes. In his works we find likewiſe deſcriptions of powders for ſeveral uſes, to take off fungous fleſh, and to blow into the eyes in opthalmies, &c.

Theſe were almoſt all the medicines uſed by Hippocrates for external purpoſes. The compound medicines given inwardly were either liquid, ſolid, or lambative. The liquid ones were prepared either by decoction or infuſion in a proper liquor, which, when ſtrained, was kept for uſe; or by macerating certain powders in ſuch liquors, and ſo taking them together, or by mixing different kinds of liquors together. The ſolid medicines conſiſted

of juices inſpiſſated; of gums, reſins, or powders, made up with them or with honey, or ſomething proper to give the neceſſary conſiſtence to the medicine. Theſe were made up in a form and quantity fit to be ſwallowed with eaſe. The lambative was of a conſiſtence between ſolid and fluid; and the patients were obliged to keep it for ſome time to diſſolve in the mouth, that they might ſwallow it leiſurely. This remedy was uſed to take off the acrimony of thoſe humours which ſometimes fall upon this part, and provoke coughing and other inconvenience. The baſis of this laſt compoſition was honey. It is worth our obſervation, that the compound medicines of Hippocrates were but very few, and compoſed only of four or five ingredients at moſt; and that he not only underſtood pharmacy, or the art of compounding medicines, but prepared ſuch as he uſed himſelf, or cauſed his ſervants to prepare them in his houſe by his directions.

We have thus given ſome account of the ſtate of medicine as practiſed and taught by Hippocrates, who, as we have already obſerved, has for many ages been juſtly conſidered as the father of phyſic. For when we attend to the ſtate in which he found medicine, and the condition in which he left it, we can hardly beſtow ſufficient admiration on the judgment and accuracy of his obſervations. After a life ſpent in unwearied induſtry, he is ſaid to have died at Lariſſa, a city in Theſſaly, in the 101ſt year of his age, 361 years before the birth of Chriſt.

After the days of Hippocrates, medicine in ancient Greece gradually derived improvement from the labour of other phyſicians of eminence. And we may particularly mention three to whom its future progreſs ſeems to have been not a little indebted, viz. Praxagoras, Eraſiſtratus, and Herophilus.

The firſt phyſician of eminence who differed conſiderably in his practice from Hippocrates was Praxagoras. Cœlius Aurelianus acquaints us, that he made great uſe of vomits in his practice, inſomuch as to exhibit them in the iliac paſſion till the excrements were diſcharged by the mouth. In this diſorder he alſo adviſed, when all other means failed, to open the belly, cut the inteſtine, take out the indurated feces, and then to ſew up all again; but this practice has not probably been followed by any ſubſequent phyſician.

Erasistratus was a phyſician of great eminence, and flouriſhed in the time of Seleucus, one of the ſucceſſors of Alexander the Great. According to Galen, he entirely baniſhed veneſection from medicine; though ſome affirm that he did not totally diſcard it, but only uſed it leſs frequently than other phyſicians. His reaſons for diſapproving of veneſection are as follow: It is difficult to ſucceed in veneſection, becauſe we cannot always ſee the vein we intend to open, and becauſe we are not ſure but we may open an artery inſtead of a vein. We cannot aſcertain the true quan-

lity to be taken. If we take too little, the intention is by no means anſwered: if we take too much, we run a riſk of deſtroying the patient. The evacuation of the venous blood alſo is ſucceeded by that of the ſpirits, which on that occaſion paſs from the arteries into the veins. It muſt likewiſe be obſerved, that as the inflammation is formed in the arteries by the blood coagulated in their orifices, veneſection muſt of courſe be uſeleſs and of no effect.

As Eraſiſtratus did not approve of veneſection, ſo neither did he of purgatives, excepting very rarely, but exhibited clyſters and vomits; as did alſo his maſter Chryſippus. He was of opinion, however, that the clyſters ſhould be mild; and condemned the large quantity and acrid quality of thoſe uſed by the ancients. The reaſon why purgatives were not much uſed by him was, that he imagined purging and veneſection could anſwer no other purpoſe than diminiſhing the fulneſs of the veſſels; and for this purpoſe he aſſerted that there were more effectual means than either phlebotomy or purging. He aſſerted that the humours diſcharged by cathartics were not the ſame in the body that they appeared after the diſcharge; but that the medicines changed their nature, and produced a kind of corruption in them. This opinion has ſince been embraced by a great number of phyſicians. He did not believe that purgatives acted by attraction; but ſubſtituted in the place of this principle what Mr. Le Clerc imagines to be the ſame with Ariſtotle's *fuga vacui*. The principal remedy ſubſtituted by him in place of purging and veneſection was abſtinence. When this, in conjunction with clyſters and vomits, was not ſufficient to eradicate the diſeaſe, he then had recourſe to exerciſe. All this was done with a view to diminiſh the plenitude, which, according to him, was the moſt frequent cauſe of all diſeaſes. Galen alſo informs us, that Eraſiſtratus had ſo great an opinion of the virtues of ſuccory in diſeaſes of the viſcera and lower belly, and eſpecially in thoſe of the liver, that he took particular pains to deſcribe the method of boiling it, which was, to boil it in water till it was tender; then to put it into boiling water a ſecond time, in order to deſtroy its bitterneſs; afterwards to take it out of the water, and preſerve it in a veſſel with oil; and, laſtly, when it is to be uſed, add a little weak vinegar to it. Nay, ſo minute and circumſtantial was Eraſiſtratus with regard to the preparation of his favourite ſuccory, that he gave orders to tie ſeveral of the plants together, becauſe that was the more commodious method of boiling them. The reſt of Eraſiſtratus's medicines conſiſted almoſt entirely of regimen; to which he added ſome topical remedies, ſuch as cataplaſms, fomentations, and unctions. In ſhort, as he could neither endure compounded medicines nor ſuperſtitious and fine-ſpun reaſonings, he reduced medicine to a very ſimple and compendious art.

In ſome other reſpects, Eraſiſtratus appears to have been very bold; and as an anatomiſt he is ſaid to have been exceedingly cruel, inſomuch that he is repreſented by ſome as having diſſected criminals while yet alive. In a ſcirrhous liver, or in tumors of that organ, Cœlius Aurelianus obſerves, that Eraſiſtratus made an inciſion through the ſkin and integuments, and having opened the abdomen he applied medicines immediately to the part affected. But though he was thus bold in performing operations on the liver, yet he did not approve of the paracenteſis or tapping in the dropſy; becauſe (ſaid he) the waters being evacuated, the liver, which is inflamed and become hard like a ſtone, is more preſſed by the adjacent parts which the waters kept at a diſtance from it, ſo that by this means the patient dies. He declared alſo againſt drawing teeth which were not looſe; and uſed to tell thoſe who talked with him on this operation, that, in the temple of Apollo, there was to be ſeen an inſtrument of lead for drawing teeth; in order to inſinuate, that we muſt not attempt the extirpation of any but ſuch as are looſe, and called for no greater force for their extirpation than what may be ſuppoſed in an inſtrument of lead.

Herophilus, the diſciple of Praxagoras, and contemporary of Eraſiſtratus, followed a leſs ſimple practice: he made ſo great uſe of medicines both ſimple and compound, that neither he nor his diſciples would undertake the cure of any diſorder without them. He ſeems alſo to have been the firſt who treated accurately of the doctrine of pulſes, of which Hippocrates had but a ſuperficial knowledge. Galen, however, affirms, that on this ſubject he involved himſelf in difficulties, and advanced abſurdities; which indeed we are not greatly to wonder at, conſidering the time in which he lived. He took notice of a diſeaſe at that time pretty rare, and to which he aſcribes certain ſudden deaths. He calls it a *palſy of the heart*; and perhaps it may be the ſame diſeaſe with what is now termed the *angina pectoris*.

According to Celſus, it was about this time that medicine was firſt divided into three branches, viz. the dietetic, the pharmaceutical, and the chirurgical medicine. The firſt of theſe employed a proper regimen in the cure of diſeaſes; the ſecond, medicines; and the third, the operation of the hands: and the ſame author informs us, that theſe three branches became now the buſineſs of as many diſtinct claſſes of men; ſo that from this time we may date the origin of the three profeſſions of phyſicians, apothecaries, and ſurgeons.—Before this diviſion, thoſe called *phyſicians* diſcharged all the ſeveral offices belonging to the three profeſſions; and there were only two kinds of them, viz. one called αρχιτεκτονοι, who only gave their advice to the patients, and direction to thoſe of an inferior claſs, who were called δημιουργοι and worked with their hands either in performing the operations, or in the compoſition and application of remedies.

The firſt grand revolution which happened in the medicinal art

after the days of Herophilus and Eraſiſtratus was occaſioned by the founding of the empiric ſect by Serapion of Alexandria about 287 years before Chriſt. The diviſion into dogmatiſts and empirics had indeed ſubſiſted before; but about this time the latter party began to grow ſtrong, and to have champions publicly aſſerting its cauſe. Galen inform us, that Serapion uſed Hippocrates very ill in his writings, in which he diſcovered an exceſs of pride, ſelf-ſufficiency, and contempt for all the phyſicians that went before him. We have ſome ſketches of his practice in Cœlius Aurelianus, from which we may infer, that he retained the medicines of Hippocrates and the other phyſicians who went before him, though he rejected their reaſoning. We know not what arguments he advanced for the ſupport of his ſentiments, ſince his works are loſt, as well as thoſe of the other empirics; and we ſhould know nothing at all of any of them, if their adverſaries had not quoted them in order to confute them.

The empirics admitted only one general method of obtaining ſkill in the medical art, which was by experience, called by the Greeks εμπειρια. From this word they took their name, and refuſed to be called after the founder or any champion of their ſect. They defined experience a knowledge derived from the evidence of ſenſe. It was either fortuitous, or acquired by deſign. For acquiring practical ſkill they recommended what they called τηρησις, or one's own obſervation, and the reading of hiſtories or caſes faithfully related by others. Hence they thought that we are enabled to know a diſeaſe by its reſemblance to others; and, when new diſeaſes occurred, to conclude what was proper to be done from the ſymptoms they had in common with others that were before known. They aſſerted, that obſervation ought principally to be employed in two different ways: firſt in diſcovering what things are ſalutary, and what are of an indifferent nature; and, ſecondly, what particular diſeaſe is produced by a certain concurrence of ſymptoms; for they did not call every ſymptom a diſeaſe, but only ſuch a combination of them as from long experience they found to accompany each other, and produced ſuch diſorders as began and terminated in the ſame manner.

On the other hand, the dogmatiſt affirmed, that there was a neceſſity for knowing the latent as well as the evident cauſes of diſeaſes, and that the phyſician ought to underſtand the natural actions and functions of the human body; which neceſſarily preſuppoſes a knowledge of the internal parts. By ſecret or latent cauſes they meant ſuch as related to the elements or principles of which our bodies are compoſed, and which are the origin of a good or bad ſtate of health. They aſſerted that it was impoſſible to know how to cure a diſeaſe without knowing the cauſe whence it proceeded; becauſe undoubtedly it behoved them to vary prodigiouſly in themſelves according to the different cauſes by which they were produced.

The next remarkable perſon in the hiſtory of phyſic is ASCLEPIADES, who flouriſhed in the century immediately preceding the birth of Chriſt. He introduced the philoſophy of Democritus and Epicurus into medicine, and ridiculed the doctrines of Hippocrates. He aſſerted, that matter conſidered in itſelf was of an unchangeable nature; and that all perceptible bodies were compoſed of a number of ſmaller ones, betweeen which there were interſperſed an infinity of ſmall ſpaces totally void of all matter. He thought that the ſoul itſelf was compoſed of theſe ſmall bodies. He laughed at the principle called *Nature* by Hippocrates, and alſo at the imaginary faculties ſaid by him to be ſubſervient to her; and ſtill more at what he called *Attraction*. This laſt principle Aſclepiades denied in every inſtance, even in that of the loadſtone and ſteel, imagining that this phenomenon proceeded from a concourſe of corpuſcles, and a particular diſpoſition or modification of their pores. He alſo maintained, that nothing happened or was produced without ſome cauſe; and that what was called *nature* was in reality no more than *matter* and *motion*. From this laſt principle he inferred that Hippocrates knew not what he ſaid when he ſpoke of Nature as an intelligent being, and aſcribed qualities of different kinds to her. For the ſame reaſon he ridiculed the doctrine of Hippocrates with regard to criſes; and aſſerted that the termination of diſeaſes might be as well accounted for from mere matter and motion. He maintained, that we were deceived if we imagined that Nature always did good; ſince it was evident that ſhe often did a great deal of harm. As for the days particularly fixed upon by Hippocrates for criſes, or thoſe on which we uſually obſerve a change either for the better or the worſe, Aſclepiades denied that ſuch alterations happened on thoſe days rather than on others. Nay, he aſſerted that the criſis did not happen at any time of its own accord, or by the particular determination of nature for the cure of the diſorder, but that it depended rather on the addreſs and dexterity of the phyſician; that we ought never to wait till a diſorder terminates of its own accord, but that the phyſician, by his care and medicines, muſt haſten on and advance the cure.—According to him, Hippocrates and other ancient phyſicians attended their patients rather with a view to obſerve in what manner they died than in order to cure them; and this under pretence that Nature ought to do all herſelf, without any aſſiſtance.

According to Aſclepiades, the particular aſſemblage of the various corpuſcles above mentioned, and repreſented as of different figures, is the reaſon why there are ſeveral pores or interſtices within the common maſs, formed by theſe corpuſcles; and why theſe pores are of a different ſize. This being taken for granted, as theſe pores are in all the bodies we obſerve, it muſt of courſe follow, that the human body has ſome peculiar to itſelf, which, as well as thoſe of all other bodies, contain other minute bodies, which paſs and repaſs by thoſe pores that communicate with each other; and as theſe

pores or interſtices are larger or ſmaller, ſo the corpuſcles which paſs through them differ proportionably as to largeneſs and minuteneſs. The blood conſiſts of the largeſt of theſe corpuſcles, and the ſpirits, or the heat, of the ſmalleſt.

From theſe principles he infers, that as long as the corpuſcles are freely received by the pores, the body remains in its natural ſtate; and on the contrary, it begins to recede from that ſtate when the corpuſcles find any obſtacle to their paſſage. Health therefore depends on the juſt proportion between the pores and the corpuſcles they are deſtined to receive and tranſmit; as diſeaſes, on the contrary, proceed from a diſproportion between theſe pores and the corpuſcles. The moſt uſual obſtacle on this occaſion proceeds from the corpuſcles embracing each other, and being retained in ſome of their ordinary paſſages, whether theſe corpuſcles arrive in too large a number, are of irregular figures, move too faſt or too ſlow, &c.

Among the diſorders produced by the corpuſcles ſtopping of their own accord, Aſclepiades reckoned phrenſies, lethargies, pleuriſies, and burning fevers. Pains, in particular, are claſſed among the accidents which derive their origin from a ſtagnation of the largeſt of all the corpuſcles of which the blood conſiſts. Among the diſorders produced by the bad ſtate and diſpoſition of the pores, he placed deliquiums, languors, extenuations, leanneſs, and dropſies. Theſe laſt diſorders he thought proceeded from the pores being too much relaxed and opened: the dropſy in particular, he thinks, proceeds from the fleſh being perforated with various ſmall holes, which convert the nouriſhment received into them into water. Hunger, and eſpecially that ſpecies of it called *fames canina*, proceeds from an opening of the large pores of the ſtomach and belly; and thirſt from an opening of their ſmall ones. Upon the ſame principles, he accounted for intermittent fevers. Quotidian fevers are cauſed by retention of the largeſt corpuſcles, thoſe of the tertian kind by a retention of corpuſcles ſomewhat ſmaller; and quartan fevers are produced by a retention of the ſmalleſt corpuſcles of all.

The practice of Aſclepiades was ſuited to remove theſe imaginary cauſes of diſorders. He compoſed a book concerning common remedies, which he principally reduced to three, *viz.* geſtation, friction, and the uſe of wine. By various exerciſes he propoſed to render the pores more open, and to make the juices and ſmall bodies, which cauſe diſeaſes by their retention, paſs more freely; and while the former phyſicians had not recourſe to geſtation till towards the end of long continued diſorders, and when the patients, though entirely free from fever, were yet too weak to take ſufficient exerciſe by walking, Aſclepiades uſed geſtation, from the very beginning of the moſt burning fevers. He laid it down as a maxim, that one fever was to be cured by another; that the ſtrength of the patient was to be exhauſted by making him watch and endure

thirſt to ſuch a degree, that, for the two firſt days of the diſorder, he would not allow them to cool their mouths with a drop of water. Celſus alſo obſerves, that though Aſclepiades treated his patients like a butcher during the firſt days of the diſorder, he indulged them ſo far afterwards as even to give directions for making their beds in the ſofteſt manner. On ſeveral occaſions Aſclepiades uſed frictions to open the pores. The dropſy was one of the diſeaſes in which this remedy was uſed; but the moſt ſingular attempt was, by this means, to lull phrenetic patients aſleep. But though he enjoined exerciſe ſo much to the ſick, he denied it to thoſe in health; a piece of conduct not a little ſurpriſing and extraordinary. He allowed wine freely to patients in fevers, provided the violence of the diſorder was ſomewhat abated. Nor did he forbid it to thoſe who were afflicted with the phrenzy: nay, he ordered them to drink it till they were intoxicated, pretending by that means to make them ſleep; becauſe, he ſaid, wine had a narcotic quality and procured ſleep, which he thought abſolutely neceſſary for thoſe who laboured under that diſorder. To lethargic patients he uſed it on purpoſe to excite them, and rouſe their ſenſes: he alſo made them ſmell ſtrong-ſcented ſubſtances, ſuch as vinegar, caſtor, and rue, in order to make them ſneeze; and applied to their heads cataplaſms of muſtard made up with vinegar.

Beſides theſe remedies, Aſclepiades enjoined his patients abſtinence to an extreme degree. For the firſt three days, according to Celſus, he allowed them no aliment whatever; but on the fourth began to give them victuals. According to Cælius Aurelianus, however, he began to nouriſh his patients as ſoon as the acceſſion of the diſeaſe was diminiſhed, not waiting for an entire remiſſion; giving to ſome aliments on the firſt, to others on the ſecond, to others on the third, and ſo on to the ſeventh day. It ſeems almoſt incredible to us, that people ſhould be able to faſt till this laſt-mentioned term; but Celſus aſſures us, that abſtinence till the ſeventh day was enjoined by the predeceſſors of Aſclepiades, and by Heraclides Tarentinus.

The next great revolution which happened in the medicinal art, was brought about by THEMISON, the diſciple of Aſclepiades, who lived not long before the time of Celſus, during the end of the reign of Auguſtus, or beginning of that of Tiberius. The ſect founded by him was called *methodic*, becauſe he endeavoured to find a method of rendering medicine more eaſy than formerly.

He maintained, that a knowledge of the cauſes of diſeaſes was not neceſſary, provided we have a due regard to what diſeaſes have in common and analogous to one another. In conſequence of this principle, he divided all diſeaſes into two, or at moſt three, kinds. The firſt included diſeaſes ariſing from ſtricture; the ſecond, thoſe ariſing from relaxation; and the third, thoſe of a mixed nature, or ſuch as partook both of ſtricture and relaxation.

Themiſon alſo aſſerted, that diſeaſes are ſometimes acute, and ſometimes chronical; that for a certain time they increaſe; that at a certain time they are at their height; and that at laſt they were obſerved to diminiſh. Acute diſeaſes, therefore, according to him, muſt be treated in one way, and chronical ones in another; one method muſt be followed with ſuch as are in their augmentation, another with ſuch as are at their height, and a third with ſuch as are in their declenſion. He aſſerted, that the whole of medicine conſiſted in the obſervation of that ſmall number of rules which are founded upon things altogether evident. He ſaid, that all diſorders, whatever their nature was, if included under any of the kinds above mentioned, ought to be treated preciſely in the ſame way, in whatever country and with whatever ſymptoms they happen to ariſe. Upon theſe principles, he defined medicine to be a method of conducting to the knowledge of what diſeaſes have in common with each other, and which at the ſame time is evident.

Themiſon was old when he laid the foundation of the Methodic ſect; and it was only brought to perfection by THESSALUS, who lived under the emperor Nero. Galen and Pliny accuſe this phyſician of intolerable inſolence and pride, and report that he gave himſelf the air of deſpiſing all other phyſicians; and ſo intolerable was his vanity, that he aſſumed the title of *the Conqueror of Phyſicians*, which he cauſed to be put upon his tomb in the Appian-way. Never was mountebank (ſays Pliny) attended by a greater number of ſpectators than Theſſalus had generally about him; and this circumſtance is the leſs to be wondered at, if we conſider that he promiſed to teach the whole art of medicine in leſs than ſix months. In reality, the art might be learned much ſooner if it comprehended no more than what the methodiſts thought neceſſary: for they cut off the examination of the cauſes of diſeaſes followed by the dogmatics; and ſubſtituted in the room of the laborious obſervations of the empirics, indications drawn from the analogy of diſeaſes, and the mutual reſemblance they bear to each other. The moſt ſkilful of all the methodic ſect, and he who put the laſt hand to it, was SORANUS. He lived under the emperors Trajan and Adrian, and was a native of Epheſus.

One of the moſt celebrated medical writers of antiquity was CELSUS, whom we have already had occaſion to mention. Moſt writers agree that he lived in the time of Tiberius, but his country is uncertain. It is even diſputed whether or not he was a profeſſed phyſician. Certain it is, however, that his books on medicine are the moſt valuable of all the ancients next to thoſe of Hippocrates. From the latter, indeed, he has taken ſo much, as to acquire the name of the *Latin Hippocrates*; but he has not attached himſelf to him ſo cloſely as to reject the aſſiſtance of other authors. In many particulars he has preferred Aſclepiades. With him he laughs at

the critical days of Hippocrates, and aſcribes the invention of them to a fooliſh and ſuperſtitious attachment to the Pythagorean doctrine of numbers. He alſo rejected the doctrine of Hippocrates with regard to veneſection, of which he made a much more general uſe; but did not take away ſo much at a time, thinking it much better to repeat the operation than weaken the patient by too great an evacuation at one time. He uſed cupping alſo much more frequently, and differed from him with regard to purgatives. In the beginning of diſorders, he ſaid, the patients ought to endure hunger and thirſt; but afterwards they were to be nouriſhed with good aliments; of which, however, they were not to take too much, nor fill themſelves all of a ſudden, after having faſted. He does not ſpecify how long the patient ought to practiſe abſtinence; but affirms, that in this particular it is neceſſary to have a regard to the diſeaſe, the patient, the ſeaſon, the climate, and other circumſtances of a like nature. The ſigns drawn from the pulſe he looked on to be very precarious and uncertain. "Some (ſays he) lay great ſtreſs upon the beating of the veins or the arteries; which is a deceitful circumſtance, ſince that beating is ſlow or quick, and varies very much, according to the age, ſex, and conſtitution, of the patient. It even ſometimes happens that the pulſe is weak and languid when the ſtomach is diſordered, or in the beginning of a fever, though in other reſpects the body be in a good ſtate: ſo that we might, in this latter caſe, be induced to believe that a man is very weak, when he is juſt entering into a violent paroxyſm, has ſtrength enough left, and may be eaſily recovered from it. On the contrary, the pulſe is often high, and in a violent commotion, when one has been expoſed to the ſun, or comes out of a bath, or from uſing exerciſe; or when one is under the influence of anger, fear, or any other paſſion. Beſides, the pulſe is eaſily changed by the arrival of the phyſician, in conſequence of the patient's anxiety to know what judgment he will paſs upon his caſe. To prevent this, the phyſician muſt not feel the patient's pulſe on his firſt arrival: he muſt firſt ſit down by him, aſſume a chearful air, inform himſelf of his condition; and if he is under any dread, endeavour to remove it by encouraging diſcourſe: after which he may examine the beating of the artery. This nevertheleſs does not hinder us from concluding, that if the ſight of the phyſician alone can produce ſo remarkable a change in the pulſe, a thouſand other cauſes may produce the ſame effect." But although Celſus thought for himſelf, and in not a few particulars differed from his predeceſſors, yet in his writings, which are not only ſtill preſerved, but have gone through almoſt innumerable editions, we have a compendious view of the practice of almoſt all his predeceſſors: and he treats of the healing art in all its branches, whether performed *manu, victu, vel medicamentis*. His writings, therefore, will naturally be had recourſe to by every one who wiſhes either to become acquainted with the practice of the ancients prior to the fall

of the Roman empire, or to read medical Latin in its greateſt purity.

About the 131ſt year after Chriſt, in the reign of the emperor Adrian, lived the celebrated GALEN, a native of Pergamus, whoſe name makes ſuch a conſpicuous figure in the hiſtory of phyſic. At this time the dogmatic, empiric, methodic, and other ſects, had each their abettors. The methodics were held in great eſteem, and looked upon to be ſuperior to the dogmatics, who were ſtrangely divided among themſelves, ſome of them following Hippocrates, others Eraſiſtratus, and others Aſclepiades. The empirics made the leaſt conſiderable figure of any. Galen undertook the reformation of medicine, and reſtored dogmatiſm. He ſeems to have been of that ſect which was called *eclectic*, from their chooſing out of different authors what they eſteemed good in them, without being particularly attached to any one more than the reſt. This declaration he indeed ſets out with; but, notwithſtanding this, he follows Hippocrates much more than any of the reſt, or rather follows nobody elſe but him. Though before his time ſeveral phyſicians had commented on the works of Hippocrates, yet Galen pretends that none of them had underſtood his meaning. His firſt attempt therefore was to explain the works of Hippocrates; with which view he wrote a great deal, and after this ſet about compoſing a ſyſtem of his own. In one of his books entitled, "Of the eſtabliſhment of medicine," he defines the art to be one which teaches to preſerve health and cure diſeaſes. In another book, however, he propoſes the following definition: "Medicine (ſays he) is a ſcience which teaches what is ſound, and what is not ſo; and what is of an indifferent nature, or holds a medium between what is ſound and what is the reverſe." He affirmed, that there are three things which conſtitute the object of medicine, and which the phyſician ought to conſider as ſound, as not ſound, or of a neutral and indifferent nature. Theſe are the body itſelf, the ſigns, and the cauſes. He eſteems the human body ſound, when it is in a good ſtate or habit with regard to the ſimple parts of which it is compoſed, and when beſides there is a juſt proportion between the organs formed of theſe ſimple parts. On the contrary, the body is reckoned to be unſound, when it recedes from this ſtate, and the juſt proportion above mentioned. It is in a ſtate of neutrality or indifference, when it is in a medium between ſoundneſs and its oppoſite ſtate. The ſalutary ſigns are ſuch as indicate preſent health, and prognoſticate that the man may remain in that ſtate for ſome time to come. The inſalubrious ſigns, on the contrary, indicate a preſent diſorder, or lay a foundation for ſuſpecting the approach of one. The neutral ſigns, or ſuch as are of an indifferent nature, denote neither health nor indiſpoſition, either for the preſent, or for the time to come. In like manner he ſpeaks of cauſes ſalutary, unſalutary, and indifferent.

These three dispositions of the human body, that is, soundness, its reverse, and a neutral state, comprehend all the differences between health and disorder or indisposition: and each of these three states or dispositions has a certain extent peculiar to itself. A sound habit of body, according to the definition of it already given, is very rare, and perhaps never to be met with; but this does not hinder us to suppose such a model for regulating our judgment with respect to different constitutions. On this principle Galen establishes eight other principal constitutions, all of which differ more or less from the perfect model above mentioned. The four first are such as have one of the four qualities of hot, cold, moist, or dry, prevailing in too great a degree; and accordingly receive their denomination from that quality which prevails over the rest. The four other species of constitutions receive their denominations from a combination of the abovementioned: so that according to his definition, there may be a hot and dry, a hot and moist, a cold and moist, and a cold and dry constitution. Besides these differences, there are certain others which result from occult and latent causes, and which, by Galen, are said to arise from an *idiosyncrasy* of constitution. It is owing to this idiosyncrasy that some have an aversion to one kind of aliment and some to another: that some cannot endure particular smells, &c. But though these eight last-mentioned constitutions fall short of the perfection of the first, it does not thence follow that those to whom they belong are to be classed among the valetudinary and diseased. A disease only begins when the deviation becomes so great as to hinder the action of the parts.

Galen describes at great length the signs of a good or bad constitution, as well as those of what he calls a *neutral habit*. These signs are drawn from the original qualities of cold, hot, moist, and dry, and from their just proportion or disproportion with respect to the bulk, figure, and situation, of the organical parts. With Hippocrates he establishes three principles of an animal body; the parts, the humours, and the spirits. By the parts he properly meant no more than the solid parts: and these he divided into similar and organical. Like Hippocrates, he also acknowledged four humours; the blood, the phlegm, the yellow bile, and black bile. He established three different kinds of spirits; the vital, the animal, and the natural. The first of these are, according to him, nothing else but a subtle vapour arising from the blood, which draws its origin from the liver, the organ or instrument of sanguification. After these spirits are conveyed to the heart, they, in conjunction with the air we draw into the lungs, become the matter of the second species, that is, of the vital spirits, which are again changed into those of the animal kind in the brain. He supposed that these three species of spirits served as instruments to three kinds of faculties, which reside in the respective parts where these faculties are formed. The natural faculty is the first of these, which he placed in the liver, and imagined to preside over the nutrition,

growth, and generation, of the animal. The vital faculty he lodged in the heart, and ſuppoſed that by means of the arteries it communicated warmth and life to all the body. The animal faculty, the nobleſt of all the three, and with which the reaſoning or governing faculty was joined, according to him, has its ſeat in the brain; and, by means of the nerves, diſtributes a power of motion and ſenſation to all the parts, and preſides over all the other faculties. The original ſource or principle of motion in all theſe faculties, Galen, as well as Hippocrates, defines to be *Nature*.

Upon theſe principles Galen defined a diſeaſe to be "ſuch a preternatural diſpoſition or affection of the parts of the body, as primarily, and of itſelf, hinders their natural and proper action." He eſtabliſhed three principal kinds of diſeaſes: the firſt relates to the ſimilar parts; the ſecond, to the organical; and the third is common to both theſe parts. The firſt kind of diſeaſes conſiſts in the intemperature of the ſimilar parts; and this is divided into an intemperature *without matter*, and an intemperature *with matter*. The firſt diſcovers itſelf when a part has more or leſs heat or cold than it ought to have, without that change of quality in the part being ſupported and maintained by any matter. Thus, for inſtance, a perſon's head may be overheated and indiſpoſed by being expoſed to the heat of the ſun, without that heat being maintained by the continuance of congeſtion of any hot humour in the part. The ſecond ſort of intemperature is when any part is not only rendered hot or cold, but alſo filled with a hot or cold humour, which are the cauſes of the heat or cold felt in the part. Galen alſo acknowledged a ſimple intemperature: that is, when one of the original qualities, ſuch as heat or cold, exceeds alone and ſeparately; and a compound intemperature, when two qualities are joined together, ſuch as heat and dryneſs, or coldneſs and humidity. He alſo eſtabliſhed an equal and unequal temperature. The former is that which is equally in all the body, or in any particular part of it, and which creates no pain, becauſe it is become habitual, ſuch as dryneſs in the hectic conſtitution. The latter is diſtinguiſhed from the former, in that it does not equally ſubſiſt in the whole of the body, or in the whole of a part. Of this kind of intemperature we have examples in certain fevers, where heat and cold, equally, and almoſt at the ſame time, attack the ſame part; or in other fevers, which render the ſurface of the body cold as ice, while the internal parts burn with heat; or laſtly, in caſes where the ſtomach is cold and the liver hot.

The ſecond kind of diſorders, relating to the organical parts, reſults from irregularities of theſe parts, with reſpect to the number, bulk, figure, ſituation, &c.; as when one has ſix fingers, or only four; when one has any part larger or ſmaller than it ought be, &c. The third kind, which is common both to the ſimilar

and the original parts, is a ſolution of continuity, which happens when any ſimilar or compound part is cut, bruiſed, or corroded.

Like Hippocrates, Galen diſtinguiſhed diſeaſes into acute and chronical; and, with reſpect to their nature and genus, into benign and malignant; alſo into epidemic, endemic, and ſporadic.

After having diſtinguiſhed the kinds of diſeaſes, Galen comes to explain the cauſes; which he divides into external and internal. The external cauſes of diſeaſes, according to him, are ſix things, which contribute to the preſervation of health when they are well diſpoſed and properly uſed, but produce a contrary effect when they are imprudently uſed or ill diſpoſed. Theſe ſix things are, the air, aliments and drink, motion and reſt, ſleeping and watching, retention and excretion, and laſtly the paſſions. All theſe are called the *procatarctic* or *beginning* cauſes, becauſe they put in motion the internal cauſes; which are of two kinds, the *antecedent* and the *conjunct*. The former is diſcovered only by reaſoning; and conſiſts for the moſt part in a peccancy of the humours, either by plenitude or cacochymy, *i. e.* a bad ſtate of them. When the humours are in too large a quantity, the caſe is called a *plethora*; but we muſt obſerve, that this word equally denotes too large a quantity of all the humours together, or a redundance of one particular humour which prevails over the reſt. According to theſe principles, there may be a ſanguine, a bilious, a pituitous, or a melancholy plenitude: but there is this difference between the ſanguine and the three other plenitudes, that the blood, which is the matter of the former, may far ſurpaſs the reſt: whereas, if any of the three laſt-mentioned ones do ſo, the caſe is no longer called *plenitude*, but *cacochymy*; becauſe theſe humours, abounding more than they ought, corrupt the blood. The cauſes he alſo divides into ſuch as are manifeſt and evident, and ſuch as are latent and obſcure. The firſt are ſuch as ſpontaneouſly come under the cognizance of our ſenſes when they act or produce their effects: the ſecond are not of themſelves perceptible, but may be diſcovered by reaſoning: the third ſort, *i. e.* ſuch as he calls *occult* or *concealed*, cannot be diſcovered at all. Among this laſt he places the cauſe of the hydrophobia.

He next proceeds to conſider the ſymptoms of diſeaſes. A ſymptom he defines to be "a preternatural affection depending upon a diſeaſe, or which follows it as a ſhadow does a body." He acknowledged three kinds of ſymptoms: the firſt and moſt conſiderable of theſe conſiſted in the action of the parts being injured or hindered; the ſecond in a change of the quality of the parts, their actions in the mean time remaining entire; the third related to defects in point of excretion and retention.

After having treated of ſymptoms, Galen treats of the *ſigns* of diſeaſes. Theſe are divided into *diagnoſtic* and *prognoſtic*. The firſt are ſo called becauſe they enable us to know diſeaſes, and diſtinguiſh

them from each other. They are of two sorts, *pathognomonic* and *adjunct*. The first are peculiar to every disease, make known its precise species, and always accompany it, so that they begin and end with it. The second are common to several diseases, and only serve to point out the difference between diseases of the same species. In a pleurisy, for instance, the pathognomonic signs are a cough, a difficulty of breathing, a pain of the side, and a continued fever; the adjunct signs are the various sorts of matter expectorated, which are sometimes bloody, sometimes bilious, &c.—The diagnostic signs were drawn from the defective or disordered dispositions of the parts, or from the diseases themselves; secondly, from the causes of diseases; thirdly, from their symptoms; and lastly, from the particular dispositions of each body, from things which prove prejudicial and those that do service, and from epidemical diseases.—The prognostic signs he gathered from the species, virulence, and peculiar genus of the disease: but as we have already spoken so largely concerning the prognostics of Hippocrates, it is superfluous to be particular on those of Galen.—His method of cure differed little from that of Hippocrates: but from the specimen already given of Galen's method of teaching the medical art, it is evident that his system was little else than a collection of speculations, distinctions, and reasonings; whereas that of Hippocrates was founded immediately upon facts, which he had either observed himself, or had learned from the observation of others.

The system of Galen, however, notwithstanding its defects and absurdities, remained almost uncontradicted for a very long period. Indeed it may be considered as having been the prevailing system till the inundation of the Goths and Vandals put an almost entire stop to the cultivation of letters in Europe. But during the general prevalence of the system of Galen, there appeared some writers to whom medicine was indebted for improvements, at least in certain particulars. Among the most distinguished of these we may mention Oribasius, Ætius, Alexander, and Paulus.

Oribasius flourished about the year 360, and was physician to the emperor Julian. He speaks very fully of the effects of bleeding by way of scarification, a thing little taken notice of by former writers; from his own experience he assures us that he had found it successful in a suppression of the menses, defluxions of the eyes, headach, and straitness of breathing even when the person was extremely old. He tells his own case particularly, when the plague raged in Asia, and he himself was taken ill, that the second day he scarified his leg, and took away two pounds of blood; by which means he entirely recovered, as did several others who used it. In this author also we find the first description of a surprising and terrible distemper, which he termed λυκα θρωπα, a species of melancholy and madness, which he describes thus. "The persons affected get out of their houses in the night-time, and in every

thing imitate wolves, and wander among the ſepulchres of the dead till day-break. You may know them by theſe ſymptoms: Their looks are pale; their eyes heavy, hollow, dry, without the leaſt moiſture of a tear; their tongue exceedingly parched and dry, no ſpittle in their mouth, extreme thirſt; their legs, from the falls and the bruiſes they receive, full of incurable ſores and ulcers."

ÆTIUS lived very near the end of the fifth, or in the beginning of the ſixth century. Many paſſages in his writings ſerve to ſhow us how much the actual and potential cautery were uſed by the phyſicians of that age. In a palſy, he ſays, that he ſhould not at all heſitate to make an eſchar either way, and this in ſeveral places; one in the nape, where the ſpinal marrow takes its riſe, two on each ſide of it; three or four on the top of the head, one juſt in the middle, and three others round it. He adds, that in this caſe, if the ulcers continue running a good while, he ſhould not doubt of a perfect recovery. He is ſtill more particular when he comes to order this application for an inveterate aſthma, after all other remedies have been tried in vain. One, he ſays, ſhould be made on each ſide near the middle of the joining of the clavicle, taking care not touch the wind-pipe: two other little ones are then to be made near the carotids under the chin, one on each ſide, ſo that the cauſtic may penetrate no further than the ſkin; two others under the breaſts, between the third and fourth ribs; and again, two more backwards towards the fifth and ſixth ribs. Beſides theſe there ought to be one in the middle of the thorax, near the beginning of the xiphoid cartilage over the orifice of the ſtomach; one on each ſide between the eighth and ninth ribs; and three others in the back, one in the middle, and the two others juſt below it, on each ſide of the vertebræ. Thoſe below the neck ought to be pretty large, not very ſuperficial, nor very deep: and all theſe ulcers ſhould be kept open for a very long time.

Ætius takes notice of the worms bred in different parts of the body called *dracunculi*, which were unknown to Galen. He ſeems alſo to be the firſt Greek writer, among the Chriſtians, who gives us any ſpecimen of medicinal ſpells and charms; ſuch as that of a finger of St. Blaſius for removing a bone which ſticks in the throat, and another in relation to a fiſtula. He gives a remedy for the gout, which he calls the *grand drier*; the patient is to uſe it for a whole year, and obſerve the following diet each month. "In September, he muſt eat and drink milk; in October, he muſt eat garlic; in November, abſtain from bathing; in December, he muſt eat no cabbage; in January, he is to take a glaſs of pure wine in the morning; in February, to eat no beet; in March, to mix ſweet things both in eatables and drinkables; in April, not to eat horſe-radiſh; nor in May the fiſh called *polypus*; in June, he is to drink cold water in a morning; in July, to avoid venery; and laſtly, in Auguſt, to eat no mallows." This may ſufficiently ſhow the

quackery of thoſe times, and how ſuperſtition was beginning to mix i ſelf with the art.

ALEXANDER, who flouriſhed in the reign of Juſtinian, is a more original author than either of the two former. He confines himſelf directly to the deſcribing the ſigns of diſeaſes, and the methods of cure, without meddling with anatomy, the materia medica, or ſurgery, as all the others did. He employs a whole book in treating of the gout. One method he takes of relieving this diſeaſe is by purging; and in moſt of the purges he recommends hermodactyls, of which he has a great opinion. In a cauſus, or burning fever, where the bile is predominant, the matter fit for evacuation, and the fever not violent, he prefers purging to bleeding, and ſays that he has often ordered purging in acute fevers with ſurpriſing ſucceſs. In the cauſus alſo, if a ſyncope happens from crude and redundant humours, he recommends bleeding. In a ſyncope ſucceeding the ſuppreſſion of any uſual evacuation, he recommends bleeding, with frictions. The diagnoſtics upon which he founds this practice are the following: viz. a face paler and more ſwelled than uſual, a bloated habit of body, with a little ſluggiſh pulſe, having long intervals between the ſtrokes. In tertian, and much more in quartan fevers, he recommends vomits above all other remedies, and affirms that by this remedy alone he has cured the moſt inveterate quartans. On the bulimus, or canine appetite, he makes a new obſervation, viz. that it is ſometimes cauſed by worms. He mentions the caſe of a woman who laboured under this ravenous appetite, and had a perpetual gnawing at her ſtomach and pain in her head: after taking *hiera*, ſhe voided a worm above a dozen of cubits long, and was entirely cured of her complaints.—He is alſo the firſt author who takes notice of *rhubarb*; which he recommends in a weakneſs of the liver and dyſentery.—Alexander is recommended by Dr. Freind as one of the beſt practical writers among the ancients, and well worthy the peruſal of any modern.

PAULUS was born in the iſland Ægina, and lived in the 7th century. He tranſcribes a great deal from Alexander and other phyſicians. His deſcriptions are ſhort and accurate. He treats particularly of women's diſorders; and ſeems to be the firſt inſtance upon record of a profeſſed *man-midwife*, for ſo he was called by the Arabians: and accordingly he begins his book with the diſorders incident to pregnant women. He treats alſo very fully of ſurgery; and gives ſome directions, according to Dr. Freind, not to be found in the more ancient writers.

After the downfal of the Roman empire, and when the inundation of Goths and Vandals had almoſt completely exterminated literature of every kind in Europe, medicine, though a practical art, ſhared the ſame fate with more abſtract ſciences. Learning in general, baniſhed from the ſeat of arms, took refuge among the caſtern nations, where the arts of peace ſtill continued to be

cultivated. To the Arabian phyſicians, as they have been called, we are indebted both for the preſervation of medical ſcience, as it ſubſiſted among the Greeks and Romans, and likewiſe for the deſcription of ſome new diſeaſes, particularly the ſmall-pox. Among the moſt eminent of the Arabians, we may mention Rhaſes, Avicenna, Albucaſis, and Avenzoar. But of their writings it would be tedious, and is unneceſſary, to give any particular account.—They were for the moſt part, indeed, only copiers of the Greeks; we are, however, indebted to them for ſome improvements. They were the firſt who introduced chemical remedies, though of theſe they uſed but few, nor did they make any conſiderable progreſs in the chemical art. Anatomy was not in the leaſt improved by them, nor did ſurgery receive any advancement till the time of Albucaſis, who lived probably in the 12 h century. They added a great deal to botany and the materia medica, by the introduction of new drugs, of the aromatic kind eſpecially, from the eaſt, many of which are of conſiderable uſe. They alſo found out the way of making ſugar; and by help of that, ſyrups; which two new materials are of great uſe in mixing up compound medicines.

With regard to their practice, in ſome few particulars they deviated from the Greeks. Their purging medicines were much milder than thoſe formerly in uſe; and even when they did preſcribe the old ones, they gave them in a much leſs doſe than formerly. The ſame reflection may be made concerning their manner of bleeding, which was never to that exceſſive degree practiſed by the Greeks. They deviated from Hippocrates, however, in one very trivial circumſtance, which produced a violent controverſy. The queſtion was, Whether blood in a pleuriſy ought to be drawn from the arm of the affected ſide or the oppoſite? Hippocrates had directed it to be drawn from the arm of the affected ſide; but the Arabians, following ſome other ancient phyſicians, ordered it to be drawn from the oppoſite one. Such was the ignorance of thoſe ages, that the univerſity of Salamanca, in Spain, made a decree, that no one ſhould dare to let blood but in the contrary arm; and endeavoured to procure an edict from the emperor Charles V. to ſecond it; alleging that the other method was of no leſs pernicious conſequence to medicine, than Luther's hereſy had been to religion.

In conſequence of the general decay of learning in the weſtern parts of the world, the Greek writers became totally forgot, becauſe nobody could read the language; and the Arabians, though moſtly copiers from them, enjoyed all the reputation that was due to the others. The Arabian phyſic was introduced into Europe very early, with the moſt extravagant applauſe: and not only this, but other branches of their learning, came into repute in the weſt; inſomuch that in the 11th century, the ſtudies of natural philo-

ſophy and the liberal arts were called *the ſtudies of the Saracens.* This was owing partly to the cruſades undertaken againſt them by the European princes; and partly to the ſettlement of the Moors in Spain, and the intercourſe they and other Arabians had with the Italians. For, long before the time of the cruſades, probably in the middle of the 7th century, there were Hebrew, Arabic, and Latin profeſſors of phyſic ſettled at Salernum: which place ſoon grew into ſuch credit, that Charles the Great thought proper to found a college there in the year 802; the only one at that time in Europe. Conſtantine the African flouriſhed here towards the latter end of the 11th century. He was a native of Carthage; but travelled into the eaſt, and ſpent 30 years in Babylon and Bagdad, by which means he became maſter of the oriental languages and learning. He returned to Carthage: but being informed of an attempt againſt his life, made his eſcape into Apulia, where he was recommended to Robert Guiſcard, created in 1060 duke of that country, who made him his ſecretary. He was reputed to be very well verſed in the Greek, as well as the eaſtern tongues; and ſeems to have been the firſt who introduced either the Greek or Arabian phyſic into Italy. His works, however, contain nothing that is new, or material; though he was then counted a very learned man, and for that age no doubt was ſo.

From this time to the end of the 15th and beginning of the 16th century, the hiſtory of phyſic furniſhes us with no intereſting particulars. This period, however, is famous for the introduction of chemiſtry into medicine, and the deſcription of three new diſeaſes, the ſweating-ſickneſs, the venereal diſeaſe, and the ſcurvy. The ſweating-ſickneſs began in 1483, in the army of Henry VII. upon his landing at Milford-haven, and ſpread itſelf at London from the 21ſt of September to the end of October. It returned here five times, and always in ſummer; firſt in 1485, then in 1506, afterwards in 1517, when it was ſo violent that it killed many in the ſpace of three hours, ſo that numbers of the nobility died, and of the commonalty in ſeveral towns often the one-half periſhed. It appeared the fourth time in 1528, and then proved mortal in ſix hours; many of the courtiers died of it, and Henry VIII. himſelf was in danger. In 1529, and only then, it infeſted the Netherlands and Germany, in which laſt country it did much miſchief. The laſt return of it was in 1551, and in Weſtminſter it carried off 120 in a day. Dr. Caius deſcribes it as a peſtilent contagious fever, of the duration of one natural day; the ſweat he reckoned to be only a natural ſymptom, or criſis of the diſtemper. It firſt affected ſome particular part, attended with inward heat and burning, unquenchable thirſt, reſtleſſneſs, ſickneſs at ſtomach, but ſeldom vomiting, headach, delirium, then faintneſs, and exceſſive drowſineſs. The puſſe was quick and vehement, and the breath ſhort and laborious.—Children, poor and old people, were leſs

ſubject to it. Of others, ſcarce any eſcaped the attack, and moſt of them died. Even by travelling into France or Flanders they did not eſcape; and what is ſtill more ſtrange, the Scots were ſaid not to be affected: abroad the Engliſh only were ſeized, and foreigners in England were free. At firſt the phyſicians were much puzzled how to treat this diſeaſe. The only cure they ever found, however, was to carry on the ſweat for a long time; for, if ſtopped, it was dangerous or fatal. The way, therefore, was for the patient to lie ſtill, and not expoſe himſelf to cold. If Nature was not ſtrong enough to force out the ſweat, it was neceſſary to aſſiſt her, by art with clothes, wine, &c. The violence of the diſtemper was over in 15 hours; but there was no ſecurity for the patient till 24 were paſſed. In ſome ſtrong conſtitutions there was a neceſſity to repeat the ſweating, even to 12 times. The removing out of bed was attended with great danger; ſome who had not ſweated enough fell into very bad fevers.—No fleſh-meat was to be allowed in all the time of the diſtemper; nor drink for the firſt five hours. In the ſeventh, the diſtemper increaſed; in the ninth the delirium came on, and ſleep was by all means to be avoided. However terrible this diſorder appeared at firſt, it ſeldom proved obſtinate, if treated in the above-mentioned manner.

In the beginning of the 16th century, the famous chemiſt Paracelſus introduced a new ſyſtem into medicine, founded on the principles of his art. The Galenical ſyſtem had prevailed till his time, but the practice had greatly degenerated, and was become quite trifling and frivolous. The phyſicians rejected the uſe of opium, mercury, and other efficacious remedies. Paracelſus, who made uſe of theſe, had therefore greatly the advantage over them; and now all things relating to medicine were explained on imaginary chemical principles. It will eaſily be conceived that a practice founded in this manner could be no other than the moſt dangerous quackery. At this time, however, it was neceſſary; for now a new diſeaſe over-ran the world, and threatened greater deſtruction than almoſt all the old ones put together, both by the violence of its ſymptoms, and its baffling the moſt powerful remedies at that time known.—This was the venereal diſeaſe, which is ſaid to have been imported from the Weſt Indies by the companions of Chriſtopher Columbus. Its firſt remarkable appearance was at the ſiege of Naples in 1494, from whence it was ſoon after propagated through Europe, Aſia, and Africa. The ſymptoms with which it made the attack at that time were exceedingly violent, much more ſo than they are at preſent; and conſequently were utterly unconquerable by the Galeniſts. The quacks and chemiſts, who boldly ventured on mercury, though they no doubt deſtroyed numbers by their exceſſive uſe of it, yet ſhowed that a remedy for this terrible diſtemper was at laſt found out, and that a proper method of treating it might ſoon be fallen upon. Shortly after the Weſt-

Indian ſpecific guaiacum was diſcovered: the materia medica was enriched with that and many other valuable medicines, both from the Eaſt and Weſt Indies: which contributed conſiderably to the improvement of the practice of phyſic. At this period, as ſea voyages of conſiderable duration became more frequent, the ſcurvy became a more frequent diſorder, and was of courſe more accurately deſcribed. But, probably, from ſuppoſed analogy to the contagions which at that time were new in Europe, very erroneous ideas were entertained with regard to its being of an infectious nature: and it is not impoſſible, that, from its being attended alſo with ulcers, it was on ſome occaſions confounded with ſyphilitic complaints.

The revival of learning, which now took place throughout Europe, the appearance of theſe new diſeaſes, and the natural fondneſs of mankind for novelty, contributed greatly to promote the advancement of medicine as well as of other ſciences. While, at the ſame time, the introduction of the art of printing rendered the communication of new opinions as well as new practices ſo eaſy a matter, that to enumerate even the names of thoſe who have been juſtly rendered eminent for medical knowledge would be a very tedious taſk. It was not, however, till 1628 that the great Dr. William Harvey demonſtrated and communicated to the public one of the moſt important diſcoveries reſpecting the animal economy, the circulation of the blood. This diſcovery, more effectually than any reaſoning, overturned all the ſyſtems which had ſubſiſted prior to that time. It may juſtly be reckoned the moſt important diſcovery that has hitherto been made in the healing art: for there can be no doubt that it puts the explanation of the phenomena of the animal body, both in a ſtate of health and diſeaſe, on a more ſolid and rational footing than formerly. It has not, however, prevented the riſe of numerous fanciful and abſurd ſyſtems. Theſe, though faſhionable for a ſhort time, and ſtrenuouſly ſupported by blind adherents, have yet in no long period fallen into deſerved contempt. And notwithſtanding the abilities and induſtry of Stahl, Hoffman, Boerhaave, and Cullen, we may eaſily venture to aſſert, that no general ſyſtem has yet been propoſed which is not liable to innumerable and unſurmountable objections. Very great progreſs has indeed been made in explaining the philoſophy of the human body, from aſcertaining by deciſive experiment the influence of the circulating, the nervous, and the lymphatic ſyſtems in the animal economy. But every attempt hitherto made to eſtabliſh any general theory in medicine, that is to conduct the cure of every diſeaſe on a few general principles, has equally deviated from truth with thoſe of Hippocrates and Galen; and has equally tended to miſlead thoſe who have adopted it. Indeed we may with confidence venture to aſſert, that from the very nature of the ſubject itſelf, medicine does not admit of ſuch ſimplicity. No one can deny that

the human body consists of a very great number of different parts, both solids and fluids. It is, however, equally certain, that each of these is from many different causes liable to deviations from the sound state. And although some slight changes may take place without what can be called a morbid affection, yet we well know, that every change taking place to a certain degree in any one part will necessarily and unavoidably produce an affection of the whole. Hence we may without hesitation venture to affirm, that every general theory which can be proposed, attempting to explain the phenomena, and conduct the cure, of all diseases on a few general principles, though for some time it may have strenuous advocates, will yet in the end be found to be both ill-grounded and pernicious.

The art of medicine has been much more usefully improved by careful attention to the history, theory, and practice, of particular diseases, and by endeavouring to ascertain from cautious observation the symptoms by which they are to be distinguished, the causes by which they are induced, and the means by which they are to be prevented, alleviated, or cured. On this footing, presently, we shall endeavour to give a brief account of at least the most important affections to which the human body is subjected, delivering what appear to us to be the best established facts and observations respecting each.

It cannot but be obvious to the reader, that the History of Medicine might yet farther be adorned with the addition of some illustrious names who have figured *in latter times*; but as circumstances on which their celebrity is founded are almost universally known and acknowledged, and as the detail must necessarily be carried to an inconvenient length, we shall content ourselves with adding in this place, what, however, it must be allowed, is no unsuitable appendage, to wit, an account of the MEDICAL SCHOOL at EDINBURGH.

As this school has now attained a degree of celebrity scarcely equalled, and certainly not surpassed, by any similar seminary in Europe, some account of those meritorious individuals whose genius and industry have been so successful in diffusing so extensively its well-earned fame, may not be regarded as unworthy of a place in this work.

The first founder of the Medical School of this city was certainly the late excellent Dr. Alexander Monro, a man whose great modesty, humanity, indefatigable industry, and high professional talents, excited the love and admiration of his contemporaries; and whose works exhibit such profound researches, important discoveries, and great practical utility, as must endear his memory to the present and to every future generation.

Dr. Alexander Monro was born in London, on the 8th of September, O.S. 1697. His father, Mr. John Monro, was

an eminent ſurgeon, and ſerved in the army in that capacity. Soon after the birth of his ſon he retired from the army, and fixed the ſcene of his reſidence in Edinburgh, where his profeſſional ſkill, his active induſtry, and his conciliating deportment, ſoon eſtabliſhed him in extenſive practice. But although much occupied in the line of his profeſſion, he devoted a great ſhare of his attention to the education of his ſon, whoſe dawning genius he ſoon obſerved, and with pleaſure ſuperintended. At this period Edinburgh afforded few opportunities for medical improvement, and Mr. Monro, who was well acquainted with this defect, and anxious to remove it, fondly hoped that that ſpirit of diligence and inveſtigation, which actuated his ſon even from his infancy, if judiciouſly directed, and furniſhed with the proper means of improvement, might in time capacitate him to impart that knowledge which was then ſo great a deſideratum.

Young Monro, diſtinguiſhed by active genius, and by great induſtry, ſoon acquired every branch of literature at that time taught in the Univerſity of Edinburgh; and having early reſolved upon the profeſſion of medicine, we may ſuppoſe him to have been initiated in the preliminaries of that ſcience under the tuition of his father, a man well qualified to direct him, and deeply intereſted in his ſucceſs. Farther, however, in the career of improvement he could not then advance; for, at this period, no traces of a Medical School had exiſted; there were indeed nominal profeſſors, but there were neither ſtudents nor public prelections. Young Monro, of courſe, found it neceſſary to ſelect ſome other field for proſecuting his enquiries; accordingly, an extenſive plan of education, firſt in London, afterwards in Paris and in Leyden, was judiciouſly deviſed, and ſucceſsfully carried into execution. During his reſidence in theſe places, Monro's diligence in availing himſelf of every opportunity for improvement which his ſituation offered, was indefatigable. To the moſt eminent teachers of the times he repaired for inſtruction; and among thoſe whoſe public prelections he attended, it will be ſufficient to mention the names of a Cheſelden, of a Hawkſby, Chomel, Bouquet, Thibaut, and the immortal Boerhaave. With Boerhaave he lived in habits of ſtrict intimacy, and, on leaving Leyden, this truly great man amply atteſted his profeſſional ſkill, and his penetrating genius.

Monro did not reſt ſatisfied with the knowledge derived from his attendance on theſe celebrated profeſſors; eagerly deſirous to excel in the profeſſion which he embraced, he explored every collateral channel through which real knowledge could be obtained. He every-where courted the intimacy of men conſpicuous for profeſſional ſkill, or for literary attainments, and he aſſociated with thoſe who had been proſecuting the ſame enquiries with himſelf. In a ſociety of this kind at London, he read an Eſſay on the Bones in general, which conſtituted the ground-work of a future publication

on that ſubject, a treatiſe which alone is ſufficient to confer immortality on its author, and which, in point of practical utility and accuracy of deſcription, ſtands as yet unrivalled among works on oſteology. Of his activity and ſkill as a practical anatomiſt, he at this time exhibited ſome elegant ſpecimens in preparations of different parts of the human body, which were preſented by his father to the Royal Colleges of Phyſicians and Surgeons, and ſo well received by them, that a Mr. Drummond, who was then nominal profeſſor of anatomy, aſſured him, that if the future progreſs of his ſon correſponded with theſe fruits of his induſtry, he would, on his return to Scotland, reſign the anatomical chair in his favour, and, by devolving his charge upon ſo promiſing a ſucceſſor, convert his nominal dignity into an uſeful profeſſion.

Having, in conſequence of Mr. Drummond's reſolution, the proſpect of ſoon filling the anatomical chair, there can be no doubt that this corner-ſtone of medical ſcience was paramount in Monro's mind to every other ſubject of enquiry; but to his contemporaries, his practice, and to us his writings, exhibit ſatisfactory proofs of his attention to every other branch of medicine, and while they maintain his title to the character of an accompliſhed anatomiſt, ſubſtantiate his claim to the reputation of an able phyſician.

Qualified in this manner for the duties of a practitioner, and for the office of a teacher, Dr. Monro returned to Edinburgh. In that place fame had reported his acquirements previous to his arrival, he was not of courſe permitted to remain long inactive. He had not reſided there many months, when, in the year 1720, he was called upon to give the firſt courſe of lectures on anatomy and ſurgery which was ever delivered in that city. For the execution of this arduous taſk he brought great zeal and conſummate talents, he could of courſe hardly fail in giving ample ſatisfaction; his ſucceſs indeed correſponded with the expectations of his warmeſt admirers. The accuracy of his demonſtrations, and the ingenuity of his phyſiological remarks, were equally conſpicuous; while the conſtant application of his ſubject to the practice of phyſic and ſurgery, rendered his prelections peculiarly valuable.

It is not detracting from the abilities of this eminent profeſſor to aſſert their inadequacy to diffuſe the fame of a ſchool which had to cope with ſo many rival ſeminaries of deſerved eminence, without ſome coadjutors to ſecond and to ſupport his exertions. Senſible of this fact, his father, whoſe zeal for the eſtabliſhment of a Medical School here had acquired ſtrength proportionate to the probability of ſucceſs, prevailed on Dr. Alſton, the then king's botaniſt for Scotland, to give a courſe of lectures on the Materia Medica. Dr. Alſton was a reſpectable aſſociate; but other branches of medicine ſtill remained to be illuſtrated. Monro, therefore, exerted his powers of perſuaſion to kindle in others that

enthuſiaſm for enlarging the boundaries of medical ſcience with which he himſelf was animated. But a ſhort period elapſed, when his endeavours in this reſpect were crowned with ſucceſs, and the young profeſſor ſoon found himſelf aſſociated with colleagues whoſe talents gratified his moſt ardent wiſhes; with a Rutherford, a Sinclair, a Plummer, and an Innes, names which will be long remembered, and are deſervedly conſpicuous in the annals of medicine.

Countenanced by the labours of theſe eminent men, and of their immediate ſucceſſors, Dr. Monro, with unremitting diligence, conſecrated his time and his talents to the improvement of medical ſcience for the period of half a century. During this long lapſe of years, he muſt have witneſſed the increaſing fame of a ſeminary of education with a delight which reſulted from a conſciouſneſs of its being, in a great meaſure, indebted to himſelf for its exiſtence; and before the termination of his diſtinguiſhed career, he found it inferior to none, and equalled by few, of the medical ſchools in Europe. Such was the conſpicuous reward of that aſpiring genius, who had given birth to the medical ſeminary, which, in the time of the highly and juſtly famed Dr. CULLEN, arrived at the acmé of its celebrity.

We deem it not improper here briefly to ſketch the arrangement which he obſerved in his annual courſe of lectures on anatomy and ſurgery, which, with the greateſt aſſiduity, and without the leaſt interruption, he delivered to a crowded and an admiring audience for the period of forty years. This courſe laſted upwards of ſix months, and ſo great was the reputation he acquired as a teacher, that ſtudents flocked to him, not only from the moſt diſtant parts of the Britiſh dominions, but alſo from foreign nations.

1. He introduced his courſe with an hiſtorical ſketch of the progreſs of anatomy from the earlieſt ages. In delivering this intereſting abſtract, the ſtrength of his memory, and his facility of expreſſion, were peculiarly conſpicuous. There are thoſe living who ſtill remember with what eaſe and fluency he gave a regular account of the moſt diſtinguiſhed anatomiſts, from the earlieſt periods to the preſent times; mentioning the different improvements and diſcoveries, the exact periods at which every diſcovery was made, and the claims of different authors to the honours of particular diſcoveries.

2. Next followed his lectures on oſteology. After a luminous and full diſcuſſion of the ſtructure, uſe, and diſeaſes of the bones in general, he entered upon the conſideration of each in particular, demonſtrating it to his pupils both ſingly and in the ſkeleton; and after ſhewing its particular parts and ſtructure, he treated of its uſes, of the diſeaſes and accidents to which it is ſubject.

3. He demonſtrated all the muſcles of an adult ſubject, with the viſcera of all the different cavities of the human body, and ſhewed the nerves and blood-veſſels in the bodies of children. After demonſtrating each organ, he always treated of its phyſiology and pathology, illuſtrating the diſeaſes to which it is liable, and enumerating the moſt approved remedies. In this diviſion of his courſe he alſo exhibited preparations of the different parts, as he treated of them.

4. After finiſhing the anatomical demonſtrations of the human body, he endeavoured to illuſtrate ſtill farther this intereſting ſubject, and to throw ſome more light on the animal economy, by the diſſection of different animals, quadrupeds, fowls, and fiſhes, and by comparing the ſtructure and uſe of their organs with the correſponding organs in man.

5. He conſidered particularly the diſeaſes for the removal of which chirurgical operations are commonly neceſſary, and the beſt methods of treating them. He then ſhewed to his pupils the different operations of ſurgery performed on the dead ſubject, and mentioned the various methods which had been propoſed for performing theſe operations, with the advantages and diſadvantages attending each.

6. After the operations of ſurgery, he ſhewed the different bandages and machines uſed by ſurgeons, with the mode of their application, and mentioned the caſes in which they were uſeful.

7. He cloſed his long and laborious winter courſe with ſome general lectures on the phyſiology of the human frame.

We have thus briefly adverted to the plan which the celebrated Monro adopted in his lectures, becauſe it exhibits a conſpicuous proof of his great judgment, of his extenſive and various information; and becauſe it may ſafely be propoſed as a model for the imitation of other anatomical demonſtrators.

Hitherto we have contemplated this eminent man chiefly in his profeſſional capacity; but to regard him in this light alone would be but exhibiting a partial view of his character and conduct. In the labours connected with his department in the univerſity, his diligence and anxiety to excel were indeed exemplary; but he was no leſs aſſiduous in adding to the ſtock of his own knowledge, and in the improvement of medicine in its various branches, both as a ſcience and as an art. He had long and ſeriouſly reflected on the manifold advantages which would accrue to ſtudents in medicine, to the country at large, and indeed to ſociety in general, from the eſtabliſhment of an hoſpital in the city of Edinburgh. To impart immediate relief to the unfortunate whom the accumulated load of diſeaſe and of poverty cruſh to the ground; to illuſtrate the healing art both by experiment and by example; to impart uſeful inſtruction not only to the

ſtudent but alſo to the practitioner, and even to remove ſome of thoſe difficulties which impede the progreſs of medicine itſelf, were the invaluable conſequences which it was reaſonably expected ſuch an eſtabliſhment would produce.

The mind of this benevolent man was impreſſed with this view of the ſubject; and in order to accompliſh the great work, he had recourſe to every expedient which an active genius, moved by compaſſion for the miſeries of his race, and intereſted in every feaſible plan for their mitigation, could ſuggeſt. He wrote a pamphlet relative to the advantages which would accrue to the community from ſuch an inſtitution, and the impreſſion it produced on the public was ſuch as to intereſt every denomination of people in the undertaking, from the firmeſt conviction of its being calculated, not only to accommodate the poor and the needy, but to advance the public good. Thus was the hoſpital erected by the joint co-operation, not only of thoſe whom Heaven had bleſſed with enlarged views and with feeling hearts, but even of others, whom the partiality of fortune had placed in affluent circumſtances, and whom, although but ſlightly impreſſed with the deſire of alleviating the miſeries of their poor brethren, the peruſal of Dr. Monro's pamphlet had convinced of the utility of ſuch an eſtabliſhment.

The limits of this introduction will not allow us to deſcant upon the character of any other individual who gave an active countenance to Monro, in realiſing this great national charity, elſe honourable mention might and indeed ought to be made of many benevolent characters, and more eſpecially of the late George Drummond, eſq. who had often occupied the chair of chief magiſtrate of the city of Edinburgh, with no leſs credit to himſelf than advantage to the public; and for whoſe liberal principles, and inceſſant endeavours for the eſtabliſhment of the royal infirmary, his memory will be long held in ſacred remembrance by a grateful poſterity. The taſk of deſigning, ſuperintending, and executing every part of this great work, was devolved by the firſt contributors upon this active magiſtrate and upon Dr. Monro, under the deſignation of the building committee; and by the joint exertions of theſe two meritorious individuals, an hoſpital, large, elegant, and commodious, was ſoon provided with every accommodation for its poor, diſeaſed, and deſtitute inmates. To their mutual labours, therefore, this country is indebted for all the benefits derived from the Royal Infirmary of Edinburgh.

In theſe active exertions Dr. Monro looked forward to the many benevolent purpoſes which a public hoſpital would ſubſerve, but his attention was chiefly engroſſed by the advantages which would accrue from it as a field for medical education; and to the attainment of this great object he devoted an active ſhare of his labours to the lateſt period of his life. When

burdened with thoſe infirmities which labour and age had faſtened upon him, he retired from his claſs, and conſigned to his ſon the charge of the anatomical theatre; he was ſtill aſſiduous in his attendance in the hoſpital, and continued to give clinical lectures, with great ſkill and with indefatigable induſtry. In the treatment of his patients his practice was rational; and his remarks on the caſes which came under his view, indicated the acuteneſs of his intellect, and the ſolidity of his judgment. Even when baffled in the efforts of his medical ſkill, diſſection furniſhed him with an opportunity of imparting many uſeful leſſons to his pupils. The knowledge of the cauſes of diſeaſe, by diſſection, was an object which occupied much of his attention, and in the inveſtigation of which he embraced every opportunity which his different ſituations as phyſician, lecturer, and manager of the hoſpital afforded him. At the inſpection of his dead patients he was always preſent; and not only dictated an accurate report of the diſſection, but, with a nice diſcrimination, contraſted the diſeaſed and the ſound ſtate of the organ.

From his official capacity as an anatomical demonſtrator, and a clinical profeſſor, he had many opportunities for experiments, both on the living and on the dead ſubject; from theſe opportunities he was eminently calculated to derive every poſſible advantage, and the fruits of his labours he conſecrated to the improvement of his favourite ſcience.

We have thus delineated Dr. Monro's character as a profeſſor, a phyſician, and as a founder of our national hoſpital. That ardent and upright temper of mind which diſtinguiſhed him in theſe public functions, marked his conduct in every other department of life. His practice as a medical man was very extenſive. He was a member of many learned ſocieties, and ſuperintended the management of many public charities. Theſe engagements, however extenſive and multifarious, did not preclude him from attending to other public concerns, both of a civil and of a political nature. In ſhort, the purſuits in which this great man was engaged, perhaps exceeded, in point of variety and importance, the avocations of any of his contemporaries; yet did he diſcharge the duties relative to them all, with the ſtricteſt integrity and with the moſt rigid punctuality.

This eminent perſon was at laſt attacked by a moſt painful and lingering diſtemper, the torments of which he endured with a pious reſignation and with a ſteady fortitude. To this mortal diſeaſe, whoſe progreſs could not be arreſted by the utmoſt efforts of medical ſkill, or of human aſſiſtance, after many months' ſufferings, he fell a victim, and cloſed his moſt active and uſeful career on the 10th of July, 1767, in the 70th year of his age.—We ſhall now cloſe this ſuperficial ſketch of our ſubject with a brief notice of his diſcoveries and works.

A circumſtantial review of this learned profeſſor's numerous diſcoveries and valuable improvements, both in the ſcientific and practical departments of the healing art, would lead us longer into detail than is conſiſtent with this brief memorial. We have ſeen in what degree of eſtimation he was held by his contemporaries, and poſterity will recognize his ſuperlative merits in his writings, when every biographical notice regarding him ſhall have periſhed in the ſtream of oblivion. Of every ſociety in Edinburgh, inſtituted either for the improvement of the arts, or for the diffuſion of the ſciences, he was juſtly regarded one of its ableſt ſupporters, and of its brighteſt ornaments. He was a member of the Colleges of Surgeons and Phyſicians; of the Medical and Philoſophical Societies; of a ſelect ſociety conſtituted for the purpoſe of diſcuſſing moral and political queſtions; and of the Society for promoting Arts, Sciences, and Manufactures, in Scotland. In the diſcuſſions of all theſe various bodies he engaged with an active and uniform ardour, and his zeal correſponded with his pre-eminent talents. Thus deſervedly eſteemed and reſpected at home, he was equally revered and honoured abroad. Of the Royal Society of London he was a non-reſident member; and the Royal College of Phyſicians at Paris enrolled his name in the catalogue of its foreign aſſociates.—Let us now take a curſory view of his writings.

His Treatiſe on Oſteology was originally deſigned to facilitate the progreſs of ſtudents in this fundamental branch of anatomical knowledge, but it merits attention from the greateſt adept in the ſcience; and from its peruſal the moſt experienced practitioner may derive uſeful information. Every perſon who is acquainted with this invaluable treatiſe, muſt indeed regard it as a monument of its author's abilities, exhibiting at once the moſt luminous proofs of extenſive reading, accurate information, and judicious reflection. The deſcription of the bones is minute, exact, and accordant with nature; the ſentiments of other authors are faithfully narrated, and candidly appreciated; and the work every-where abounds with new and important obſervations, which have an immediate reference to practice. This great work met with the deſerved reception.—Eight large impreſſions were ſold during the author's life-time. It has been tranſlated into moſt European languages; and the French edition, in folio, publiſhed by the celebrated Monſieur Sue, demonſtrator to the Royal Academy of Sculpture and Painting at Paris, is one of the moſt ſuperb books in print, and adorned with as elegant and maſterly engravings as are to be found in any anatomical work.

To the latter editions of his Treatiſe on the Bones, he added a Neurology, or Anatomy of the Nerves, in which he gives a

conciſe and accurate deſcription of the larger branches of theſe conveyers of ſenſe and motion. As this work was alſo written for the improvement of his pupils, he has not delineated the minuteſt branches, being afraid that his going into ſuch particular details might embarraſs the minds of the young enquirers, rather than impart inſtruction. In this treatiſe he has alſo mentioned moſt of the prevailing opinions concerning their ſtructure and uſe; and although ſucceeding anatomiſts have called in queſtion his ſpeculations relative to the texture and phyſiology of theſe important organs, it muſt be confeſſed that the arguments adduced in ſupport of his opinions are equally ſpecious and ingenious. To this treatiſe he has alſo ſubjoined an account of the receptacle of the chyle, and of the thoracic duct, organs of eſſential importance in the animal economy, which, in point of accuracy, has not been ſurpaſſed by any ſucceeding author.

We are now to conſider him as a contributor to, and the editor of, another and more extenſive medical work. In the year 1731 the profeſſors of medicine, and other phyſicians and ſurgeons in the city of Edinburgh, conſtituted themſelves into a ſociety for collecting and publiſhing ſuch medical obſervations and eſſays as the members themſelves could bring forward, or as might be communicated to them by friends and correſpondents. To this ſociety Dr. Monro acted in the capacity of ſecretary. At the beginning of the inſtitution the members punctually attended, and remarked upon the papers ſubmitted to their inſpection: but after the publication of the firſt volume, they grew remiſs in the diſcharge of their duty, and not long thereafter the whole labour both of collecting and publiſhing their tranſactions was devolved upon the ſecretary. Of the papers of this collection doctor Monro furniſhed many more than his ſtrict quota; and in theſe excellent eſſays he has added materially to our knowledge, both of the ſtructure and phyſiology of ſeveral parts of the human body. His anatomical knowledge ſuggeſted to him many uſeful and practical inferences, and he propoſed many new improvements in the mode of performing many capital operations, the greater part of which have been adopted by our moſt eminent ſurgeons. To doctor Monro, therefore, are we chiefly indebted for the ſix volumes of Medical Eſſays and Obſervations, a work which has been ſingularly approved of by the moſt competent judges, undergone various editions in the Engliſh language, and has, moreover, been tranſlated into many foreign languages. The very univerſal reception with which this work has been deſervedly honoured, ſuperſedes the neceſſity of our approbation: ſuffice it to notice, that honourable mention is made of it by the immortal Haller, who appreciated its intrinſic merit ſo highly as to declare, that it ought to find a place in the li-

brary of every medical practitioner *; and indeed it must be confessed, that it has enriched every department of medical science with numerous and important discoveries. The plan of this society was afterwards enlarged by the admission of several other gentlemen, eminent for literary and philosophical talents, and by this arrangement, its transactions became philosophical as well as medical. When this society was thus new modelled, Dr. Monro was elected one of its presidents. Their papers were published under the designation of Literary and Physical Essays; and in the two first volumes are to be found several papers from the doctor's pen, which indicate the still exuberant treasures of his mind, and adorn the pages of that valuable collection.

His account of the success of inoculation in Scotland closed his career as an author. This paper was originally written in answer to an application from the delegates, upon whom the faculty of physicians at Paris had devolved the task of appreciating the merits of this practice. It exhibits a striking proof of his extensive correspondence, and of his indefatigable industry. It had a considerable effect in removing prejudices, which at that period were general and stubborn, and in reconciling both practitioners and parents to a simple salutary operation, that has been the means of preserving the lives of thousands, by disarming, in a great measure, a malignant distemper of its deadly virulence.

Some of his posthumous works which have appeared are distinguished by that elegance and simplicity of expression, and by that extent of information, which characterize his other masterly productions. In his Oratio de Cuticula Humana, many curious circumstances are described, which escaped the observation of former anatomists, particularly the appearance of the fibres which connect the cuticula with the *cutis vera*. In the Essay on Comparative Anatomy, originally composed from notes taken down from his lectures, but found in a more correct form among his papers, and published since his death in the quarto edition of his works, he certainly evinces considerable information. It cannot, indeed, be regarded as a complete work; but the plan is judicious, and the proper tract for enquiry pointed out, which might be easily prosecuted. The descriptions are taken from nature, and the reasoning is interesting, perspicuous, and conclusive. As in the other works of the author, so in this treatise we find many practical observations on surgery and medicine interspersed, which must equally instruct and entertain the reader.

Besides these two posthumous publications, it is understood he left several other manuscripts, which have not as yet seen the light. We have heard of a History of Anatomical Writers—

* Quinque volumina Speciminum Societatis Edinburgensis prodierunt (quorum ultimum duplex est) Medicis perutilia, et Chirurgis, et Anatomicis. Monrous ibi eminet. Haller, Meth. Stud. Med. p. 69.

An Encheiresis Anatomica—Heads of Lectures—A Treatise on Wounds and Tumors—Observations on some parts of Heister's Surgery. These papers have not been inserted in the posthumous edition of his works, although there can be little doubt of their possessing intrinsic merit; and the deserved celebrity of the author would have certainly secured them a favourable reception.

We have thus briefly reviewed the life and writings of the late doctor Alexander Monro, and it may, perhaps, be expected from us to close the narrative with a delineation of the prominent features of his character. The lineaments of his mind have, in some measure, been traced in the course of our narration, and to exhibit the aggregate of his qualifications within the limits which must be prescribed to this account, would be impossible; we shall therefore rest satisfied with observing, what indeed has already appeared in his history—that the zeal and industry displayed by him in the prosecution of knowledge have seldom been equalled, perhaps never surpassed; that he taught his favourite science with an enthusiasm and a liberality of sentiment proportioned to its vast importance; that he was conspicuous for active philanthropy and mildness of temper; that he was steady in his friendships and frank in his intercourse, a dutiful son, an affectionate father, and an excellent husband; that he was always forward to patronize modest neglected merit, and to relieve the exigencies of indigent genius. It is not contended, that in the line of his profession doctor Monro has superseded the necessity of future industry, but it is maintained that he has accomplished more than the short span of human life could well authorize us to expect from the exertions of any single individual; and that in the various stations of a student, a teacher, and a practitioner in medicine, he has exhibited a bright pattern for the imitation of posterity.

Before entering on the consideration of particular diseases, or what has commonly been styled the practice of medicine, it is necessary to give a general view of the most important functions of the animal body, and of the chief morbid affections to which they are subjected; a branch which has usually been named the *Theory* or *Institutions of Medicine*.

THEORY OF MEDICINE;

OR,

AN ACCOUNT

OF

THE PRINCIPAL FUNCTIONS

OF

THE ANIMAL BODY.

WHILE the functions of living animals, but particularly of the human ſpecies, are very numerous, the accounts given of theſe, both in a ſtate of health and diſeaſe, are very various. Without, therefore, pretending to enumerate the contradictory opinions of different authors, we ſhall, in the firſt inſtance, preſent the reader with a view of this ſubject, extracted from one of the lateſt and beſt publications reſpecting it, the *Conſpectus Medicinæ Theoreticæ* of Dr. James Gregory, profeſſor of the practice of medicine in the univerſity of Edinburgh.

The author introduces his ſubject by obſerving, that ſome functions of the human body relate to itſelf only, and others to external things. To the latter claſs belong thoſe which, by phyſicians, are called the *animal functions*; to which are to be referred all our ſenſes, as well as the power of voluntary motion, by which we become acquainted with the univerſe, and enjoy this earth. Among the functions which relate to the body, only ſome have been named *vital*, ſuch as the circulation of the blood and reſpiration; becauſe, without the conſtant continuance of theſe, life cannot ſubſiſt. Others, intended for repairing the waſte of the ſyſtem, have been termed the *natural functions*; for by the conſtant attrition of the ſolids, and the evaporation of the fluid parts of the body, we ſtand in need of nouriſhment to ſupply this waſte; after

which the putrid and excrementitious parts muſt be thrown out by the proper paſſages. The digeſtion of the food, ſecretion of the humours, and excretion of the putrid parts of the food, are referred to this claſs; which, though neceſſary to life, may yet be interrupted for a conſiderable time without danger.

A *diſeaſe* takes place when the body has ſo far declined from a ſound ſtate, that its functions are either quite impeded, or performed with difficulty. A diſeaſe therefore may happen to any part of the body, either ſolid or fluid, or to any one of the functions: and thoſe may occur, either ſingle or ſeveral of them joined together; whence the diſtinction of diſeaſes into *ſimple* and *compound*.

We have examples of the moſt ſimple kinds of diſeaſes, in the rupture or other injury of any of the corporeal organs, by which means they become leſs fit for performing their offices; or, though the organs themſelves ſhould remain ſound, if the ſolids or fluids have degenerated from a healthy ſtate; or if, having loſt their proper qualities, they have acquired others of a different, perhaps of a noxious nature; or laſtly, if the moving powers ſhall become too weak or too ſtrong, or direct their force in a way contrary to what nature requires.

The moſt ſimple diſeaſes are either productive of others, or of *ſymptoms* by which alone they become known to us. Every thing in which a ſick perſon is obſerved to differ from one in health is called a *ſymptom*; and the moſt remarkable of theſe ſymptoms, and which moſt conſtantly appear, define and conſtitute the diſeaſe.

The cauſes of diſeaſes are various; often obſcure, and ſometimes totally unknown. The moſt full and perfect proximate cauſe is that which, when preſent, produces a diſeaſe, when taken away removes it, and when changed alſo changes it. There are alſo remote cauſes, which phyſicians have been accuſtomed to divide into the *prediſponent* and *exciting* ones. The former are thoſe which only render the body fit for a diſeaſe, or which put it into ſuch a ſtate that it will readily receive one. The exciting cauſe is that which immediately produces the diſeaſe in a body already diſpoſed to receive it.

The *prediſponent* cauſe is always inherent in the body itſelf, though perhaps it originally came from without; but the exciting cauſe may either come from within or from without.

From the combined action of the prediſponent and exciting cauſes comes the *proximate* cauſe, which neither of the two taken ſingly is able to produce; ſeeing neither every exciting cauſe will produce a diſeaſe in every perſon, nor will every one prediſpoſed to a diſeaſe fall into it without an exciting cauſe. A body prediſpoſed to diſeaſe therefore has already declined ſomewhat from a ſtate of perfect health, although none of its functions are impeded in ſuch a manner that we can truly ſay the perſon is diſeaſed. Yet

ſometimes the predifponent cauſe, by continuing long, may arrive at ſuch an height, that it alone, without the addition of any exciting cauſe, may produce a real diſeaſe.—Of this we have examples in the debility of the ſimple ſolids, the mobility of the living ſolids, and in plethora.—The exciting cauſe alſo, though it ſhould not be able immediately to bring on a diſeaſe; yet if it continues long, will by degrees deſtroy the ſtrongeſt conſtitution, and render it liable to various diſeaſes; becauſe it either produces a predifponent cauſe, or is converted into it, ſo that the ſame thing may ſometimes be an exciting cauſe, ſometimes a predifponent one; of which the inclemencies of the weather, ſloth, luxury, &c. are examples.

Diſeaſes, however, ſeem undoubtedly to have their origin from the very conſtitution of the animal machine; and hence many diſeaſes are common to every body, when a proper exciting cauſe occurs, though ſome people are much more liable to certain diſeaſes than others. Some are *hereditary*; for as healthy parents naturally produce healthy children, ſo diſeaſed parents as naturally produce a diſeaſed offſpring. Some of theſe diſeaſes appear in the earlieſt infancy; others occur equally at all ages; nor are there wanting ſome which lurk unſuſpected even to the lateſt old age, at laſt breaking out with the utmoſt violence on a proper occaſion. Some diſeaſes are born with us, even though they have no proper foundation in our conſtitution, as when a fœtus receives ſome hurt by an injury done to the mother; while others, neither born with us nor having any foundation in the conſtitution, are ſucked in with the nurſe's milk. Many diſeaſes accompany the *different ſtages of life*; and hence ſome are proper to infancy, youth, and old age. Some alſo are proper to each of the ſexes, eſpecially the weaker ſex, proceeding, no doubt, from the general conſtitution of the body, but particularly from the ſtate of the parts ſubſervient to generation. Hence the diſeaſes peculiar to virgins, to menſtruating women, to women with child, to lying-in women, to nurſes, and to old women. The *climate* itſelf, under which people live, produces ſome diſeaſes; and every climate hath a tendency to produce a particular diſeaſe, either from its exceſs of heat or cold, or from the mutability of the weather. An immenſe number of diſeaſes alſo may be produced by impure air, or ſuch as is loaded with putrid, marſhy, and other noxious vapours. The ſame thing may happen likewiſe from corrupted aliment, whether meat or drink; though even the beſt and moſt nutritious aliment will hurt, if taken in too great quantity; not to mention poiſons, which are endowed with ſuch pernicious qualities, that even when taken in a very ſmall quantity they produce the moſt grievous diſeaſes, or perhaps even death itſelf. Laſtly, from innumerable *accidents and dangers* to which mankind are expoſed, they frequently come off with broken limbs, wounds, and contuſions, ſometimes quite incur-

able; and these misfortunes, though proceeding from an external cause at first, often terminate in internal diseases.

Hitherto we have mentioned only the dangers which come from without; but those are not less, nor fewer in number, which come from within. At every breath, man pours forth a deadly poison both to himself and others. Neither are the effluvia of the lungs alone hurtful: there flows out from every pore of the body a most subtile and poisonous matter, perhaps of a putrescent nature, which being long accumulated, and not allowed to diffuse itself through the air, infects the body with most grievous diseases; nor does it stop here, but produces a contagion which spreads devastation far and wide among mankind. From too much or too little exercise of our animal powers also no small danger ensues. By inactivity either of body or mind, the vigour of both is impaired; nor is the danger much less from too great employment. By moderate use, all the faculties of the mind, as well as all the parts of the body, are improved and strengthened; and here nature has appointed certain limits, so that exercise can neither be too much neglected, nor too much increased, with impunity. Hence those who use violent exercise, as well as those who spend their time in sloth and idleness, are equally liable to diseases; but each to diseases of a different kind: and hence also the bad effects of too great or too little employment of the mental powers.

Besides the dangers arising from those actions of the body and mind which are in our own power, there are others arising from those which are quite involuntary. Thus, passions of the mind, either when carried to too great excess, or when long continued, equally destroy the health; nay, will even sometimes bring on sudden death. Sleep also, which is of the greatest service in restoring the exhausted strength of the body, proves noxious either by its too great or too little quantity. In the most healthy body, also, many things always require to be evacuated. The retention of these is hurtful, as well as too profuse an evacuation, or the excretion of those things, either spontaneously or artificially, which nature directs to be retained. As the solid parts sometimes become flabby, soft, almost dissolved, and unfit for their proper offices; so the fluids are sometimes inspissated, and formed even into the hardest solid masses. Hence impeded actions of the organs, vehement pain, various and grievous diseases. Lastly, some animals are to be reckoned among the causes of diseases; namely, such as support their life at the expence of others: and these either invade us from without, or take up their residence within the body, gnawing the bowels while the person is yet alive, not only with great danger and distress to the patient, but sometimes even producing death itself.

Man, however, is not left without defence against so many and

ſo great dangers. The human body is poſſeſſed of a moſt wonderful power, by which it preſerves itſelf from diſeaſes, keeps off many, and in a very ſhort time cures ſome already begun, while others are by the ſame means more ſlowly brought to a happy concluſion. This power, called the *autocrateia*, or *vis medicatrix naturæ*, is well known both to phyſicians and philoſophers, by whom it is moſt juſtly celebrated; this alone is ſufficient for curing many diſeaſes, and is of ſervice in all. Nay, even the beſt medicines operate only by exciting and properly directing this force; for no medicine will act on a dead carcaſe. But though phyſicians juſtly put confidence in this power, and though it generally cures diſeaſes of a ſlighter nature, it is not to be thought that thoſe of the more grievous kind are to be left to the unaſſiſted efforts of the *vis medicatrix*. Phyſicians, therefore, have a twofold error to avoid, namely, either deſpiſing the powers of nature too much, or putting too great confidence in them; becauſe in many diſeaſes theſe efforts are either too feeble or too violent, inſomuch that ſometimes they are more to be dreaded than even the diſeaſe itſelf. So far, therefore, is it from being the duty of a phyſician always to follow the footſteps of Nature, that it is often neceſſary for him to take a directly contrary courſe, and oppoſe her efforts with all his might.

After this general view of the functions of the animal body, of the nature and cauſes of diſeaſe, and of the powers by which theſe are to be combated, we next come to ſpeak of the *ſolid materials* of which the body is formed. Dr. Gregory tells us, that the animal ſolid, when chemically examined, yields earth, oil, ſalt, water, phlogiſton or inflammable air, and a great quantity of mephitic air. Theſe elements are found in various proportions in the different parts of the body; and hence theſe parts are endowed with very different mechanical powers, from the hardeſt and moſt ſolid bone to the ſoft and almoſt fluid retina. Nay, it is principally in this difference of proportion between the quantities of the different elements, that the difference between the ſolid and fluid parts of the animal conſiſt, the former having much more earth and leſs water in their compoſition than the latter. The coheſion, he thinks, is owing to ſomething like a chemical attraction of the elements for one another; and its cauſe is neither to be ſought for in the gluten, fixed air, nor earth. This attraction, however, is not ſo ſtrong, but that, even during life, the body tends to diſſolution; and immediately after death putrefaction commences, provided only there be as much moiſture in it as will allow an inteſtine motion to go on. The greater the heat, the ſooner does putrefaction take place, and with the greater rapidity does it proceed; the mephitic air flies off, and together with it certain ſaline particles; after which, the coheſion of the body being totally deſtroyed, the whole falls into a putrid

colluvies, of which at length all the volatile parts being diſſipated, nothing but the earth is left behind.

This analyſis, he owns, is far from being perfect; becauſe nobody has ever been able, by combining the chemical principles of fleſh, to reproduce a compound any thing like what the fleſh originally was: but, however imperfect the analyſis may be, it ſtill has the advantage of ſhowing, in ſome meaſure, the nature and cauſes of certain diſeaſes, and thus leads phyſicians to the knowledge of proper remedies.

The *ſolid parts* are fitted for the purpoſes of life in three ſeveral ways; namely, by their coheſion, their flexibility, and their elaſticity, all of which are various in the various parts of the body. Moſt of the functions of life conſiſt in various motions. In ſome the moſt violent and powerful motions are required; and, therefore, ſuch a degree of coheſion is neceſſary in theſe parts as will be ſufficient for allowing them to perform their offices without any danger of laceration. It is therefore neceſſary that ſome of the ſolid parts ſhould be more flexible than others; and it is likewiſe neceſſary that theſe parts, along with their flexibility, ſhould have a power of recovering their former ſhape and ſituation, after the removal of the force by which they were altered.

Theſe variations in flexibility, within certain limits, ſeldom produce any material conſequence with regard to the health; though ſometimes, by exceeding the proper bounds, they may bring on real and very dangerous diſeaſes; and this either by an exceſs or diminution of their coheſion, flexibility, or elaſticity. By augmenting the coheſion, the elaſticity is alſo, for the moſt part, augmented, but the flexibility diminiſhed; by diminiſhing the coheſion, the flexibility becomes greater, but the elaſticity is diminiſhed.

The cauſes of theſe affections, though various, may be reduced to the following heads. Either the chemical compoſition of the matter itſelf is changed, or, the compoſition remaining the ſame, the particles of the ſolid may be ſo diſpoſed, that they ſhall, more or leſs, ſtrongly attract one another. As to the compoſition, almoſt all the elements may exiſt in the body in an undue proportion, and thus each contribute its ſhare to the general diſorder. But of many of theſe things we know very little; only it is apparent, that the fluid parts, which conſiſt chiefly of water, and the ſolid, which are made up of various elements, are often in very different proportions: the more water, the leſs is the coheſion or elaſticity, but the greater the flexibility; and the reverſe happens, if the ſolid or earthy part predominates.

The *remote cauſes* of theſe different ſtates, whether prediſponent or exciting, are very various. In the firſt place, idioſyncraſy itſelf, or the innate conſtitution of the body, contributes very much

to produce the abovementioned effects. Some have naturally a much harder and drier temperament of the body than others; men, for inſtance, more than women; which can with the utmoſt difficulty, indeed ſcarce by any means whatever, admit of an alteration. The ſame thing takes place at different periods of life; for, from firſt to laſt, the human body becomes always drier and more rigid. Much alſo depends on the diet made uſe of, which always produces a correſponding ſtate of the ſolids, in proportion to its being more or leſs watery. Neither are there wanting ſtrong reaſons for believing, that not only the habit of the body, but even the diſpoſition of the mind, depends very much on the diet we make uſe of. The good or bad concoction of the aliment alſo, the application of the nourithment prepared from it, and likewiſe the ſtate of the air, with regard to moiſture or dryneſs, affect the temperament of the body not a little; and hence thoſe who inhabit mountains or dry countries, are very different from the inhabitants of low marſhy places. Laſtly, the manner of living contributes ſomewhat to this effect: exerciſe preſſes out and exhales the moiſture of the body, if in too great quantity; on the contrary, ſloth and lazineſs produce an effect directly oppoſite, and cauſe a redundancy of humours.

But, putting the chemical compoſition of the ſolid parts out of the queſtion altogether, they may be affected by many other cauſes. The condenſation, for inſtance, or compreſſion of the particles, whether by mechanical cauſes, or by means of cold or heat, makes a conſiderable alteration in the ſtrength and elaſticity of every ſolid body. How much mechanical preſſure contributes to this may be underſtood from the experiments of Sir Clifton Wintringham: and hence alſo are we to deduce the reaſon of many facts of the higheſt importance in the animal economy; namely, the growth, ſtate, decreaſe of the body; its rigidity daily increaſing; and at laſt the unavoidable death incident to old age from a continuance of the ſame cauſes.

Perhaps the different denſity of the ſolids is, in ſome meaſure, owing to Nature herſelf; but it ſeems rather to depend more on the powers of exerciſe or inactivity in changing the ſtate of the ſolids, the effects of which on the body, whether good or bad, may hence be eaſily underſtood.

Heat relaxes and expands all bodies, but cold renders them more denſe and hard; the effects of which on the human body are well known to moſt people. Though the body is found to preſerve a certain degree of heat almoſt in every ſituation, it is impoſſible but that its ſurface muſt be affected by the temperature of the ambient atmoſphere; and we have not the leaſt reaſon to doubt that every part of the body may thus feel the effects of that temperature. What a difference is there between one who, expoſed to the ſouth

wind, becomes lazy and languid, ſcarce able to drag along his limbs, and one who feels the force of the cold north wind, which renders the whole body alert, ſtrong, and fit for action!

That theſe various cauſes, each of which is capable of affecting the conſtitution of the body when taken ſingly, will produce much greater effects when combined, is ſufficiently evident. The experiments of Bryan Robinſon, the effects of the warm bath, and indeed daily experience, ſhow it fully.

It is not yet certainly known what is the ultimate ſtructure of the minuteſt parts of the animal ſolid; whether it conſiſts of ſtraight fibres or threads, whoſe length is very conſiderable in proportion to their breadth, variouſly interwoven with one another, as Boerhaave ſuppoſes; or of ſpiral ones, admirably convoluted and interwoven with one another, as ſome microſcopical experiments ſeem to ſhow; or whether the cellular texture be formed of fibres and *laminæ*, and from thence the greateſt part of the body, as the celebrated Haller hath endeavoured to prove.

The *cellular texture* is obſerved throughout the whole body: it ſurrounds and connects the fibres themſelves, which are ſufficiently apparent in many of the organs, and ſlightly joins the different parts which ought to have any kind of motion upon the neighbouring ones. By a condenſation of the ſame ſubſtance alſo, the ſtrongeſt, and what ſeem the thinneſt, membranes are formed; the moſt ſimple of which, being accurately examined, diſcover the cellular ſtructure. This cellular ſubſtance ſometimes increaſes to a ſurpriſing degree, and all parts formed of it, membranes, veſſels, &c. eſpecially by a gentle diſtenſion; for a ſudden and violent diſtenſion either breaks it altogether, or renders it thinner. Sometimes alſo it grows between neighbouring parts, and joins thoſe which nature has left free. Preternatural concretions of this kind are often obſerved after an inflammation of the lungs or of the abdominal viſcera; and theſe new membranes are found to be truly cellular. This ſubſtance, when cut, or by any other means divided, grows together of its own accord; but if, by reaſon of very great inflammation and ſuppuration, a large portion of the cellular texture has been deſtroyed, it is never again renewed, and an ugly ſcar is left. It is even ſaid, that this ſubſtance, in certain caſes, is capable of joining the parts either of the ſame body with one another, or of a foreign body with them; and upon this, if on any foundation, reſts the art of Taliacotius, and that of tranſplanting teeth, lately ſo much talked of.

The cellular texture is, in ſome places, merely a kind of network, in others filled with fat. Wherever too great bulk or compreſſion would have been inconvenient or dangerous, as in the head, lungs, eyes, eye-brows, penis, ſcrotum, &c. there it collects no fat, but is lax, and purely reticulated; but between the muſcles of the

body and limbs below the ſkin, in the abdomen, eſpecially in the omentum and about the kidneys, very much fat is ſecreted and collected.

The *fat* is a pure animal oil, not very different from the expreſſed and mild vegetable ones; during life it is fluid, but of different degrees of thickneſs in different parts of the body. It is ſecreted from the blood, and is often ſuddenly reabſorbed into it, though pure oil is very rarely obſerved in the blood. It is indeed very probable, that oil, by digeſtion, partly in the primæ viæ, and partly in the lungs, is converted into gluten, and this again into oil by means of ſecretion; though no organs ſecreting the fat can be ſhown by anatomiſts. It is, however, probable, that there are ſuch organs; and that the cellular texture has ſome peculiar ſtructure in thoſe parts which are deſtined to contain the fat already ſecreted, without ſuffering it to paſs into other places; for it never paſſes into thoſe parts which are purely reticulated, although the cellular texture is eaſily permeable by air or water over the whole body, from head to foot.

The fat is augmented by the uſe of much animal food, or of any other that is oily and nouriſhing, provided the digeſtion be good; by the uſe of ſtrong drink, eſpecially malt-liquor; by much reſt of body and mind, much ſleep and inactivity, caſtration, cold, repeated bloodletting, and in general by whatever diminiſhes the vital and animal powers. Much, however, depends on the conſtitution of the body itſelf; nor is it poſſible to fatten a human creature at pleaſure like an ox. A certain degree of fatneſs, according to the age of the perſon, is a ſign and effect of good health; but when too great, it becomes a diſeaſe of itſelf, and the cauſe of other diſeaſes. It may always be very certainly removed by ſtrong exerciſe, little ſleep, and a ſpare and ſolid diet. The fat always makes up a conſiderable part of the bulk of the body, and very often by far the greateſt part. Its uſe ſeems to be to make the motion of the body more eaſy and free, by leſſening the friction of the moving parts, and thus preventing the abraſion of the ſolids, which would otherwiſe happen. It is alſo of uſe to hinder the parts from growing together, which ſometimes happens, when by an ulcer, or any other accident, a part of the cellular texture containing the fat is deſtroyed. Beſides all this, the fat contributes not a little to the beauty of the body, by filling up the large interſtices between the muſcles, which would otherwiſe give the perſon a deformed and ſhocking appearance. It is thought to be nutritious, when abſorbed from its cells by the blood; but of this we have no great certainty. It ſeems to have ſome power of defending from the cold, ſeeing nature has beſtowed it in very great quantity on thoſe animals which inhabit the colder regions.

Thoſe parts of the body which enjoy ſenſe and mobility are called *living* or *vital* ſolids. They are the brain, cerebellum,

medulla oblongata, ſpinal marrow, the nerves ariſing from theſe and diffuſed throughout the whole body, and which are diſtributed through the various organs of ſenſe and through the muſcles, and laſtly the muſcles themſelves. Senſation is much more general than mobility, as being common to all the parts already mentioned. Mobility is proper to the muſcular fibres alone: wherever there is ſenſation, therefore, we may believe that there are nerves; and wherever there is mobility, we may believe that muſcular fibres exiſt. Nay, even mobility itſelf ſeems to originate from the connection which the muſcles have with the nerves; for ſoon after the nerves are compreſſed, or tied, or cut, the muſcles to which they are diſtributed loſe their faculties; which happens, too, when the brain itſelf, or the origin of the nerves, is affected. Some reckon that the muſcles are produced from the nerves, and conſiſt of the ſame kind of matter. Both indeed have a ſimilar ſtructure, as being fibrous and of a white colour: for the muſcles when well freed from the blood, of which they contain a great abundance, are of this colour as well as the nerves; neither can the nervous fibres by any means be diſtinguiſhed from the muſcular fibres themſelves. Both have alſo ſenſation; and both ſtimulants and ſedatives act in the ſame manner, whether they be applied to the muſcles themſelves, or to the nerves.

It is difficult for us to diſcover the origin of many parts of the body, or to aſcertain whether they are produced all at the ſame time or one after another; yet it muſt be owned, that many of the muſcular parts are obſerved to have attained a remarkable degree of ſtrength, while the brain is ſtill ſoft and almoſt fluid, and that the action of theſe muſcular parts is required for the action and growth of the brain. The muſcles are alſo of a much firmer contexture than the nerves, and enjoy a power of their own, namely, that of irritability, of which the nerves never participate. Of neceſſity, therefore, either the muſcles muſt be conſtructed of ſome kind of matter different from that of the nerves; or if both are made of the ſame materials, their organization muſt be exceedingly different. But if the ſubſtance of the muſcles and nerves be totally different, we may eaſily be convinced that much of the one is always mixed with the other; for it is impoſſible to prick a muſcle even with the ſmalleſt needle, without wounding or lacerating many nervous fibres at the ſame time. Since, therefore, there is ſuch a cloſe connection between the muſcles and nerves, both as to their functions and ſtructure, they are deſervedly reckoned by phyſiologiſts to be parts of the ſame genus, called the *genus nervoſum*, or *nervous ſyſtem*.

We ſhall avoid treating of ſenſe in general, and proceed to conſider particularly each of the ſenſes, both external and internal. We begin with the ſenſe of *feeling*, as being the moſt ſimple, and at the ſame time in common to every part of the nervous ſyſtem.

In ſome places, however, it is much more acute than in others; in the ſkin, for inſtance, and eſpecially in the points of the fingers. Theſe are reckoned to have *nervous papillæ*, which by the influx of the blood are ſomewhat erected in the action of contact, in order to give a more acute ſenſation; though indeed this opinion ſeems rather to be founded on a conjecture derived from the ſtructure of the tongue, which is not only the organ of taſte, but alſo a moſt delicate organ of touch, than upon any certain obſervations.

From the ſenſe of *feeling*, as well as all the other ſenſes, either *pain* or pleaſure may riſe; nay, to this ſenſe we commonly refer both pain and almoſt all other troubleſome ſenſations, though in truth pain may ariſe from every vehement ſenſation. It is brought on by any great force applied to the ſentient part; whether this force comes from within or from without. Whatever, therefore, pricks, cuts, lacerates, diſtends, compreſſes, bruiſes, ſtrikes, gnaws, burns, or in any manner of way ſtimulates, may create pain. Hence it is ſo frequently conjoined with ſo many diſeaſes, and is often more intolerable even than the diſeaſe itſelf. A moderate degree of pain ſtimulates the affected part, and by degrees the whole body; produces a greater flux of blood and nervous power to the part affected; and often ſtimulates to ſuch motions as are both neceſſary and healthful. Hence, pain is ſometimes to be reckoned among thoſe things which guard our life. When very violent, however, it produces too great irritation, inflammation and its conſequences, fever, and all thoſe evils which flow from too great force of the circulation; it diſorders the whole nervous ſyſtem, and produces ſpaſms, watching, convulſions, delirium, debility, and fainting. Neither the mind nor body can long bear very vehement pain; and indeed Nature has appointed certain limits, beyond which ſhe will not permit pain to be carried, without bringing on delirium, convulſions, ſyncope, or even death, to reſcue the miſerable ſufferer from his torments.

Long-continued pain, even though in a more gentle degree, often brings on debility, torpor, palſy, and rigidity of the affected part. But if not too violent, nor accompanied with fever, ſickneſs, or anxiety, it ſometimes ſeems to contribute to the clearneſs and acuteneſs of the judgment, as ſome people teſtify who have been afflicted with the gout.

Anxiety is another diſagreeable ſenſation, quite different from pain, as being more obtuſe and leſs capable of being referred to any particular part, though frequently more intolerable than any pain. But we muſt take care to diſtinguiſh between this anxiety of which we treat in a medical ſenſe, and that which is ſpoken of in common diſcourſe. The latter does not at all depend on the ſtate of the body, but belongs entirely to the mind; and ariſes

from a ſenſe of danger, or a foreſight of any misfortune. The former is truly corporeal; and derives, no leſs than pain, its origin from a certain ſtate of the body. Notwithſtanding this difference, however, it is very poſſible for both theſe kinds of anxiety to be preſent at the ſame time, or for the one to be the cauſe of the other. A very great bodily anxiety will ſtrike fear and deſpondency into the moſt reſolute mind; and mental anxiety, on the contrary, if very violent and long continued, may induce the former, by deſtroying the powers of the body, eſpecially thoſe which promote the circulation of the blood.

Anxiety, in the medical ſenſe of the word, ariſes in the firſt place from every cauſe diſturbing or impeding the motion of the blood through the heart and large veſſels near it. Anxiety, therefore, may ariſe from many diſeaſes of the heart and its veſſels, ſuch as its enlargement, too great conſtriction, oſſification, polypus, palpitation, ſyncope, inflammation, debility, and alſo ſome affections of the mind. It is likewiſe produced by every difficulty of breathing, from whatever cauſe it may ariſe; becauſe then the blood paſſes leſs freely through the lungs: anxiety of this kind is felt deep in the breaſt. It is ſaid alſo to ariſe from the difficult paſſage of the blood through the liver or other abdominal viſcera.

A certain kind of anxiety is very common and troubleſome to hypochondriacal people; and ariſes from the ſtomach and inteſtines being either loaded with indigeſted and corrupted food; or diſtended with air produced by fermentation and extricated from the aliments. By ſuch a load, or diſtenſion, the ſtomach, which is a very delicate organ, becomes greatly affected. Beſides, the free deſcent of the diaphragm is thus hindered, and reſpiration obſtructed. Anxiety of this kind is uſually very much and ſuddenly relieved by the expulſion of the air; by which, as well as by other ſigns of a bad digeſtion, it is eaſily known. In theſe caſes the anxiety is uſually, though with little accuracy, referred to the ſtomach.

Anxiety alſo frequently accompanies fevers of every kind, ſometimes in a greater and ſometimes in a leſſer degree. In this caſe it ariſes as well from the general debility as from the blood being driven from the ſurface of the body and accumulated in the large veſſels; as in the beginning of an intermittent fever. Or it may ariſe from an affection of the ſtomach, when overloaded with crude, corrupted aliment; or diſtended and nauſeated with too much drink, eſpecially medicated drink. As the fever increaſes, the anxiety of the patient becomes greater and greater; remarkably ſo, according to the teſtimony of phyſicians, either immediately before the criſis, or on the night preceding it, as before the breaking out of exanthemata, hæmorrhagy, ſweat, or diarrhœa, which ſometimes remove fevers. The patient feels likewiſe an anxiety from the ſtriking in

of any eruption or critical metaſtaſis. This ſenſation alſo accompanies fevers and moſt other diſeaſes, when the vital power is exhauſted, and death approaches, of which it is the forerunner and the ſign. It happens at that time, becauſe the vital powers, unable to perform their functions, cannot make the blood circulate. But what kind of anxiety this is, the other ſigns of approaching death ſhew very evidently. Moreover, even in the time of ſleep, anxiety may ariſe from the ſame cauſes: hence frightful dreams which frequently diſturb our repoſe with ſurpriſe and terror.

Itching, an uneaſy ſenſation, with a deſire of ſcratching the place affected, is often very troubleſome, although it ſeems to be more a-kin to pleaſure than to pain. As pain proceeds from too great an irritation, either chemical or mechanical, ſo does itching proceed from a ſlight one. Titillation, or friction of a woollen ſhirt, for inſtance, upon the ſkin of a perſon unaccuſtomed to it, and of a delicate conſtitution, excites itching; as do alſo many acrid foſſils, vegetables, and animals. Hence an itching is the firſt ſenſation after the application of cantharides, although the ſame, when augmented, becomes painful. The ſame effect is produced by any thing acrid thrown out upon the ſkin; as in exanthematic fevers, the diſeaſe called the *itch*, &c. Lice, worms, eſpecially aſcarides, irritating either the ſkin or the inteſtines, excite a troubleſome itching. Certain ſpecies of internal itching excites people to many neceſſary actions both in a diſeaſed and healthy ſtate; ſuch as the excretion of fæces and urine, coughing, ſneezing and the like.

Too acute a ſenſation over the whole body is very rarely if ever obſerved. In a particular part the ſenſe of feeling is often more acute than it ought to be, either from the cuticle itſelf being too thin and ſoft, or being removed; or from the part itſelf being inflamed, or expoſed to too great heat. It becomes obtuſe, or is even quite deſtroyed over the whole body, or in great part of it, from various affections of the brain and nerves; as when they are wounded, compreſſed, or defective in vital power. This is called *anaeſtheſia*, and ſometimes accompanies palſy.

This ſenſe may be deficient in a particular part, either from the nerve being diſeaſed by ſome peculiar or ſpecific affection, or from its being compreſſed or wounded, or from the part itſelf being expoſed to too great a degree of cold;—or from the ſcarf-ſkin which covers it being vitiated, either becoming too thick or hard, by the handling of too rough, or hard, or hot bodies, as is the caſe with glaſs-makers and ſmiths; or from the elevation of the cuticle from the ſubjacent cutis, or true ſkin itſelf, by the interpoſition of blood, ſerum, or pus; or from the cutis being macerated, relaxed, or become torpid, which ſometimes happens to hydropic perſons; or laſtly, from the whole organ being cor-

rupted by gangrene, burning, cold, or contuſion. This ſenſe is very rarely depraved, unleſs perhaps in the caſe of delirium, when all the functions of the brain are diſturbed in a ſurpriſing manner.

The ſenſe next to be conſidered is that of *taſte*, the principal organ of which is the tongue; the nearer the tip of it, the more acute is the ſenſe, and the nearer the glottis ſo much the more obtuſe. It muſt be owned, however, that ſome kind of acrid ſubſtances, the taſte of which is ſcarce perceived upon the tip of the tongue, excite a moſt vehement ſenſation about its roots, or even in the throat itſelf. The tongue is endowed with many large and beautiful nervous papillæ, which ſeem to be the chief ſeat of this ſenſe, and in the act of taſting are elevated and erected, in order to give the more acute ſenſation.

Nothing can be taſted which is not ſoluble in the ſaliva, that, being applied in a fluid form, it may pervade the involucra of the tongue, and affect its nervous pulp; and hence inſoluble earths are quite inſipid. Neither is it ſufficient for a body to be ſoluble that it may be taſted: it muſt alſo have ſomething in it ſaline, or at leaſt acrid, in order to ſtimulate the nervous ſubſtance; and hence, whatever has leſs ſalt than the ſaliva is totally inſipid.

The taſte is rarely found to be too acute, unleſs through a fault in the epidermis which covers the tongue. If this be removed or wounded, or covered with ulcers, aphthæ, &c. then the taſte, becoming too acute, is painful: or ſometimes no other ſenſation than that of pain is felt. It may be impaired, as well as the ſenſe of feeling, from various diſeaſes of the brain and nerves; of which, however, the inſtances are but rare. In ſome people it is much more dull than in others; and in ſuch the ſenſe of ſmelling is uſually deficient alſo. The taſte is moſt commonly deficient on account of the want of ſaliva; for a dry tongue cannot perceive any taſte: hence this ſenſe is very dull in many diſeaſes, eſpecially in fevers, catarrhs, &c. as well on account of the defect of ſaliva as of appetite, which is of ſo much ſervice in a ſtate of health; or by reaſon of the tongue being covered with a viſcid mucus.

The taſte is frequently depraved; when, for example, we have a perception of taſte without the application of any thing to the tongue; or, if any thing be applied to it, when we perceive a taſte different from what it ought to be. This happens for the moſt part from a vitiated condition of the ſaliva, which is itſelf taſted in the mouth. Hence we may perceive a ſweet, ſaline, bitter, putrid, or rancid taſte, according to the ſtate of the ſaliva: which may be corrupted either from the general vitiated condition of the maſs of humours, or the glands which ſecrete it; of the mouth itſelf; or even of the ſtomach, the vapours and eructa-

tions of which rise into the mouth, especially when the stomach is diseased.

Besides the faults of the saliva, however, the taste may be vitiated from other causes; as, for instance, the condition of the nervous papillæ. This, however, is as yet little known to us; for the taste is sometimes plainly vitiated when at the same time the saliva appears quite insipid when tasted by other people.

Physicians, in almost every disease, but especially in fevers, enquire into the state of the tongue; not, indeed, without the greatest reason: for from this they can judge of the condition of the stomach; of the thirst, or rather the occasion the patient has for drink, when, on account of his delirium or stupor, he neither feels his thirst nor is able to call for drink. And, lastly, from an inspection of the tongue, physicians endeavour to form some judgment concerning the nature, increase, and remission, of the fever.

After the sense of taste, we proceed next to treat of that of *smell*. Its seat is in that very soft and delicate membrane, filled with nerves and blood-vessels, which covers the internal parts of the nose, and the various sinuses and cavities proceeding from thence. This sense is more acute about the middle of the septum, and the *ossa spongiosa*, where the membrane is thicker and softer, than in the deeper cavities, where the membrane is thinner, less nervous, and less filled with blood-vessels; although even these do not seem to be altogether destitute of the sense of smelling.

As by our taste we judge of the soluble parts of bodies, so by our smell we judge of those very volatile and subtile parts which fly off into the air; and, like the organ of taste, that of smell is kept moist, that it may have the more exquisite sensation, partly by its proper mucus, and partly by the tears which descend from the eyes.

Some kinds of odours greatly affect the nervous system, and produce the most surprising effects. Some gratefully excite it, and immediately recruit the spirits when almost sinking; while some produce fainting, nay, as it is alleged, even sudden death. To this head also are we to refer those antipathies which, though truly ridiculous, are often not to be subdued by any force of mind.

This sense is sometimes too acute, as well from some disease in the organ itself, which happens more rarely, as from the too great sensibility of the nervous system in general, as is sometimes observed in nervous fevers, phrenitis, and hysteria. It is more frequently, however, too dull, either from diseases of the brain and nerves, as from some violence done to the head, or from some internal cause; or it may proceed from a dryness of the organ itself, either on account of the customary humours being suppressed or turned another way, or from the membranes being

oppreſſed with too great a quantity of mucus or of tears. Of both theſe caſes we have inſtances in the catarrh, where at firſt the noſtrils are dry, but afterwards are deluged with a thin humour, or ſtopped up with a thick one. But in theſe, and many other examples, the membrane of the noſe itſelf is affected with inflammation, relaxation, or too great tenſion, by which it is impoſſible but the nerves, which conſtitute a great part of it, muſt be vitiated. It is evident alſo, that whatever obſtructs the free entrance of the air into the noſtrils, or impedes its paſſage through them, muſt prove detrimental to the ſenſe of ſmelling.

The ſenſe of *hearing* is more frequently vitiated than almoſt any of the reſt, as having a moſt delicate organ, and one compoſed of many and very ſmall parts. It frequently becomes too acute; either from the general habit of the body being too irritable, ſuch as often happens to hyſterical and lying-in-women; or from too great a ſenſibility of the brain itſelf, which is not unfrequently obſerved in fevers, as well as in phrenitis, and ſometimes in the true mania; or it may be from a diſeaſe of the ear itſelf, as when it is affected with inflammation, pain, or too great tenſion.—It may be rendered dull, or even be altogether deſtroyed, ſo that the perſon ſhall become totally deaf, from the ſame cauſes acting with different degrees of force. This happens eſpecially from the want of the external ear; or from the meatus auditorius being ſtopped up with mucus, wax, or other matters; or from the ſides of the canal growing together, as ſometimes happens after ſuppuration or the ſmall-pox; or by the membrane of the tympanum becoming rigid or relaxed, or being eroded or ruptured; or the tympanum itſelf, or the Euſtachian tube, may from certain cauſes be obſtructed; or ſome of the little bones or membranes, or ſome of the muſcles of the labyrinth itſelf, may be affected with concretion, ſpaſm, palſy, or torpor; or laſtly, it may happen from diſeaſes of the brain and nerves, all the organs of hearing remaining ſound. Hence deafneſs is often a nervous diſeaſe, coming ſuddenly on, and going off of its own accord. Hence alſo it is common in old people, all of whoſe ſolid parts are too rigid, while their nervous parts have too little ſenſibility.

Perſons labouring under fevers, eſpecially of the typhous kind, often become deaf. When this comes on along with other ſigns of an oppreſſed brain, and a great proſtration of ſtrength, it may be a very bad ſign; but for the moſt part it is a very good one, even though accompanied with ſome degree of torpor or ſleepineſs.

A very common diſeaſe in the ſenſe of hearing is when certain ſounds, like thoſe of a drum, a bell, the falling of water, &c. are heard without any tremor in the air, or without another perſon's hearing any thing. This diſeaſe is called *tinnitus aurium*,

of which various kinds have been obſerved. For the moſt part it is a very ſlight tranſient diſorder; but ſometimes it is moſt obſtinate, long-continued, and troubleſome. It ſometimes ariſes from the ſlighteſt cauſe, ſuch as any thing partially ſtopping up the meatus auditorius or Euſtachian tube itſelf, ſo that acceſs is in part denied to the air; whence it happens that the latter ſtrikes the membrane of the tympanum, or perhaps the interior parts, unequally, and with too much force. Hence *bombi*, a kind of tinnitus, are heard even by the moſt healthy when they yawn.

A much more frequent and troubleſome ſpecies of tinnitus accompanies many diſeaſes both of the febrile and nervous kind. This is occaſioned partly by the increaſed impetus of the blood towards the head, with an increaſe of ſenſibility in the nervous ſyſtem itſelf, ſo that the very beatings of the arteries are heard; and partly from the increaſed ſenſation and mobility of the nerves and muſcles of the labyrinth: whence it happens, that the parts which ought to be at reſt until excited by the tremor of the air, begin to move of their own accord, and impart their motion to other parts which are already in a morbid ſtate of too great ſenſibility.

A tinnitus ſometimes ariſes from any vehement affection of the mind; ſometimes from a diſorder in the ſtomach; ſometimes from a rheumatic diſorder affecting the ears and head; or from a catarrh, which commonly affects the tube. Sometimes, however, the tinnitus alone affects the patient; and even this is a diſeaſe of no ſmall conſequence. Theſe various cauſes, however, both of this and other diſorders of the hearing, are often very difficult to be diſtinguiſhed, as well on account of the inacceſſible ſituation of the organ, as on account of the little knowledge we have of its action. But from whatever cauſe it ariſes, both this and the other various affections of the hearing can neither be cured certainly nor eaſily.

Concerning the nature of the ſenſe of *ſight*, the reader may conſult the beſt treatiſes on Optics. Of this ſenſe ſome ſlight diſorders, or rather varieties, are often obſerved. Thoſe perſons are called *ſhort-ſighted* who cannot ſee diſtinctly unleſs the object be very near them. This diſorder ariſes from too great a refraction of the rays, by reaſon of their being too ſoon collected into a focus by the cryſtalline lens, and diverging again before they fall upon the retina, by which means they make an indiſtinct picture upon it. The moſt uſual cauſe is too great a convexity of the eye or ſome of its humours, as too prominent a cornea. It is a diſorder common to young people, which is ſometimes removed when they grow older. As ſoon as the firſt approaches of ſhort-ſightedneſs are obſerved, it is ſuppoſed it may be obviated by the perſon's accuſtoming himſelf to view remote objects, and keeping his eyes off very ſmall and near ones; as, on the contrary, it may be

brought on by the oppoſite cuſtom, becauſe the eye accommodates itſelf ſomewhat to the diſtances of thoſe objects which it is accuſtomed to view. But a concave glaſs, which cauſes the rays of light to diverge more than naturally they would before falling upon the cornea, is the moſt ſimple and certain remedy.

Long-ſighted people are thoſe who cannot ſee an object diſtinctly unleſs it be at a conſiderable diſtance from them. This ariſes from cauſes contrary to the former; namely, the eye being too flat, ſo that there is no room for refracting the rays and bringing them into a focus. Hence this defect is common in old people, and remedied by the uſe of convex glaſſes.

Thoſe are called *nyctalopes* who ſee better with a very weak than with a ſtrong light. It is a defect very ſeldom to be met with in the human race, though every perſon is ſenſible of it who hath been long kept in the dark and is then ſuddenly brought into the light. The diſeaſe ariſes from too great a ſenſibility of the retina, and the pupil being too open.

The ſight is liable to many and grievous diſorders. It is ſharpened beyond meaſure, ſo that the perſon either perceives nothing diſtinctly, or with great pain, from the ſame cauſes that induce a ſimilar diſorder in the other ſenſes; namely, exceſſive ſenſibility in the general habit of body, or a particular ſtate of the brain common in phrenitis, or even in thoſe afflicted with fevers ariſing from inflammation or too great excitement; though more frequently from the condition of the eye itſelf, one becomes unable to bear the light. The inflammation of the tunica adnata, and the forepart of the ſclerotica, is communicated to the back parts of it, and from thence to the choroides and retina itſelf. Hence the light becomes intolerable, and viſion is attended with pain and great irritation, ſometimes inducing or augmenting a delirium.

The ſenſe of ſeeing is made dull, or even totally aboliſhed, by age; the aqueous humour not being ſupplied in ſufficient quantity, and the cornea and lens, or the vitreous humour, becoming ſhrivelled or decayed. It may likewiſe happen from the cornea becoming dry and opaque; which is to be imputed to the languid motion of the blood, and to great numbers of the ſmall veſſels being obſtructed, or having their ſides concreted; or from the cryſtalline lens becoming yellow like amber, and the retina itſelf leſs ſenſible, for old age diminiſhes every ſenſation. It is totally aboliſhed by injuries of the brain, the optic nerve, or the retina, even though the ſtructure of the organ ſhould remain ſound. This diſeaſe is called an *amauroſis*; and it is eaſily known by the dilatation and immobility of the pupil, the humours of the eye remaining clear. It is commonly owing to congeſtion of blood; and ſometimes, where no congeſtion of blood can be ſhown, to mere torpor of the nerves. If it be only a torpor of part of the retina, we ſee black ſpots in thoſe things at which we look; or flies ſeem

to pass before our eyes, a very bad sign in fevers, and almost always mortal. The sight is abolished also by the obscurity or opacity of any of the parts through which the rays ought to pass and be refracted; as if the cornea lose its transparency by being covered with spots; or the aqueous humour become corrupted with blood, serum, or pus; or the lens (which often happens, and which is called a *cataract*) becomes of a grey or brown colour, or the vitreous humour be in like manner corrupted; or lastly, when all the humours being dissolved, confused, and mixed together, by inflammation and suppuration, either do not suffer the light to pass at all, or to pass imperfectly and unequally; whence either no image is formed on the retina, or it appears obscure, distorted, imperfect, and ill-coloured.

The sight is also depraved, when things appear to it of a colour different from their own, or even in another situation, and of another shape than they ought to have. This happens from the humours being tinctured with any unusual colour, as is said to happen in some instances of jaundice; or from an extravasation and mixture of the blood with the aqueous humour. A surprising depravation also, or constant and perpetual defect of vision, is not unfrequently observed in men otherwise very healthy, and who see quite clearly; namely, that they cannot distinguish certain colours, green, for example, from red. Another depravation is, when, without any light being admitted to the eyes, sparks, small drops of a flame or gold colour, and various other colours, are observed to float before us. This is generally a very slight and transient disorder, common to those whose constitutions are very irritable; and arises from the slight impulse, as it would seem, on the retina, by the vessels beating more vehemently than usual. A fiery circle is observed by pressing the eye with the finger after the eye-lids are shut. The same reason, perhaps, may be given for those sparks which are seen by persons labouring under the falling-sickness, and increasing to the size of an immense and luminous beam before they fall down in convulsions. A similar beam those who have recovered from hanging or drowning testify that they have observed; for, by reason of the respiration being suppressed, the vessels of the head swell and compress the whole brain and nervous parts of the head. Sparks of the same kind, and these too of no good omen, are observed in patients labouring under a fever, where a phrenitis or fierce delirium is at hand: and likewise in those who are threatened with palsy, apoplexy, or epilepsy.—A distinct but false perception, namely, of visible things which do not exist, is to be imputed to some injury of the brain, to madness or a delirium, not to any disease of the eye.

A very frequent *defect of vision* remains to be mentioned; namely, *squinting*. A person is said to squint who has the axes of his eyes more oblique than usual, and directed to different points.

Hence a great deformity, and often an imperfect and confused vision, by which the objects are sometimes seen double. It is an evil for the most part born with the person, and often corrected by those attempts which an infant makes to see more pleasantly and distinctly; and this even without being conscious of its own defects. It is also easily learned, especially in infants, even without their own knowledge, by that kind of imitation which has a great influence over the human race, especially in their tender years.—It is by no means, however, so easily unlearned.

Squinting is frequently occasioned by a spasm, palsy, rigidity, &c. of the muscles which manage the eye; by epilepsy; by certain diseases of the head, the hydrocephalus especially; or by any great injury done to the head. Sometimes, though very rarely, it comes on suddenly without any known cause. It is very probable, however, that squinting often arises from a fault of the retinæ, when their central points, for instance, and those similarly placed with respect to the centre, do not agree. In this case there must be a contortion of the eye, that the object may not be seen double. This seems also to be the reason why squinting is horribly increased when the person brings the object near his eye, in order to view it more perfectly. Or if the central point of either, or both, of the retinæ be insensible, or nearly so, it is necessary for the person to distort his eyes that he may have any distinct vision of objects. If the optic nerve had not entered the retina obliquely, but passed directly through its centre, we would all either have squinted or seen double.

Physicians have referred to the sense of vision that most troublesome sensation which we call a *vertigo*: though it seems rather to belong to that of feeling, or of consciousness; for in many instances the disorder is not removed either in the dark or by shutting the eye-lids. The vertigo takes place when external objects really at rest seem to reel, to whirl round, to tremble, or to move in any manner of way. If the disorder be very violent, the person is neither able to see, on account of a dimness of sight; nor can he stand, as the powers fail which ought to govern the limbs. A nausea also usually accompanies the vertigo, and the one generally produces the other.

This disorder is observed to be both the symptom and forerunner of some dangerous diseases; such as apoplexy, epilepsy, hysteria; hæmorrhages from the nose and other parts; suppressions of the menses; plethora; fevers, as well such as are accompanied with debility as those in which there is an increased impetus of the blood towards the head. An injury done to the head also, but rarely one done to the eyes, unless in so far as it affects the whole head, brings on a vertigo. A vertigo may be likewise produced by a very great and sudden loss of blood or other fluid; by debility; syncope; various diseases of the alimentary canal, of the stomach

eſpecially; poiſons admitted into the body, particularly of the narcotic kind, as opium, wine, &c. and hence vertigo is a ſymptom of every kind of drunkenneſs. Various motions alſo, either of the head or the whole body, being toſſed in a ſhip, eſpecially if the veſſel be ſmall and the ſea runs high, produce a vertigo. In theſe and ſimilar examples, the unuſual and inordinate motions of the blood are communicated to the nervous parts which are in the head; or theſe being affected by ſympathy from the neighbouring parts, produce a confuſed ſenſation, as if of a rotatory motion. Nay, it is often produced from an affection of the mind itſelf, as from beholding any thing turned ſwiftly round, or a great cataract, or looking down a precipice, or even by intenſe thought, without looking at any thing.

Though a vertigo be, for the moſt part, a ſymptom and concomitant of other diſeaſes, yet it is ſometimes a primary diſeaſe, returning at intervals, increaſing gradually, and equally impeding and deſtroying the functions of the body and mind.

Having treated of the external ſenſes, we next proceed to conſider thoſe properly called *internal*; which are, the *memory*, the *imagination*, and the *judgment*. The firſt is leſſened, diſturbed, or even totally deſtroyed, in many diſeaſes, eſpecially thoſe which affect the brain; as the apoplexy, palſy, internal tumors of the head, external violence applied, fevers, eſpecially thoſe in which there is an increaſed motion of the blood towards the head, or where the brain is any other way very much affected. It is very rarely, however, depraved in ſuch a manner that ideas are not repreſented to the mind in their proper order; or if at any time ſuch a diſorder occurs, it is conſidered rather as a diſorder of the imagination, or as a delirium, than a failure of the memory. The mind is ſaid to be diſordered, when the perceptions of memory or imagination are confounded with thoſe of ſenſe, and of conſequence thoſe things believed to be now preſent which are really paſt, or which never exiſted; or when the ſenſe of the perſon concerning ordinary things is different from that of other people. The general name for ſuch diſorders is *veſania:* if from fever, it is called *delirium.* A general fury without a fever, is called *mania*, or *madneſs:* but a partial madneſs, on one or two points, the judgment remaining ſound in all other reſpects, is called *melancholia.* There is, however, no exact and accurate limits between a ſound mind and madneſs. All immoderate vivacity borders upon madneſs; and, on the other hand, a ſorrowful and gloomy diſpoſition approaches to melancholy.

Delirium accompanies fevers of many different kinds. Sometimes it is ſlight, eaſily removed, and ſcarce to be accounted a bad ſign. Often, however, it is very violent, and one of the very worſt of ſigns, requiring the utmoſt care and attention.

A delirium is either fierce or mild. The fierce delirium is preceded and accompanied by a redneſs of the countenance, a pain of

the head, a great beating of the arteries, and noiſe in the ears; the eyes in the mean time looking red, inflamed, fierce, ſhining, and unable to bear the light; there is either no ſleep at all, or ſleep troubled with horrid dreams; the wonted manners are changed; an unuſual peeviſhneſs and ill-nature prevail. The depravation of judgment is firſt obſerved between ſleep and waking, and by the perſon's crediting his imagination, while the perceptions of ſenſe are neglected, and the ideas of memory occur in an irregular manner. Fury at laſt takes place, and ſometimes an unuſual and incredible degree of bodily ſtrength, ſo that ſeveral people can ſcarce keep a ſingle patient in his bed.

The mild delirium, on the contrary, is often accompanied with a weak pulſe, a pale collapſed countenance, and a vertigo when the patient ſits in an erect poſture; he is ſeldom angry, but often ſtupid, and ſometimes remarkably grieved and fearful. The loſs of judgment, as in the former kind, is firſt perceived when the patient is half awake; but a temporary recovery enſues upon the admiſſion of the light and the converſation of his friends. The patient mutters much to himſelf, attends little to the things around him; at laſt, becoming quite ſtupid, he neither feels the ſenſations of hunger or thirſt, nor any of the other propenſities of nature, by which means the urine and excrements are voided involuntarily. As the diſorder increaſes, it terminates in ſubſultus tendinum, tremors, convulſions, fainting, and death. The other ſpecies of delirium alſo frequently terminates in this, when the ſpirits and ſtrength of the patient begin to fail.

The ſymptoms accompanying either of theſe kinds of delirium ſhow an unuſual, inordinate, and unequal motion of the blood through the brain, and a great change in that ſtate of it which is neceſſary to the exerciſe of the mental powers. It is ſufficiently probable, that an inflammation of the brain, more or leſs violent or general, ſometimes takes place, although the ſigns of univerſal inflammation are frequently ſlight. This we learn from the diſſection of dead bodies, which often ſhow an unuſual redneſs of the brain or of ſome of its parts, or ſometimes an effuſion or ſuppuration.

The ſtate of the brain, however, may be much affected, and a delirium induced, by many other cauſes beſides the motion of the blood. In many fevers, typhus, for inſtance, the nervous ſyſtem itſelf is much ſooner and more affected than the blood; and though the morbid affections of the nervous ſyſtem are as inviſible to the ſenſes as the healthy ſtate of it, the ſymptoms of its injuries plainly ſhow that its action, or *excitement* as ſome call it, is unequal and inordinate. In this way, too, a delirium is produced by ſeveral poiſons.

The pathology of melancholy mania is much more obſcure; as coming on without any fever, or diſturbance in the blood's motion. Often alſo this is hereditary, depending on the original ſtructure

of the body, eſpecially of the brain; the fault of which, however, cannot be detected by the niceſt anatomiſt. But it is well known, that various diſeaſes of the brain, obſtructions, tumors, either of the brain itſelf, or of the cranium preſſing upon it, any injury done to the head, and, as ſome phyſicians relate, the hardneſs and dryneſs of the brain, and ſome peculiar irritations affecting the nervous ſyſtem, are capable of bringing on this malady. And indeed ſo great are the irritations affecting the nervous ſyſtem in mad people, that they often ſleep little or none for a long time.—Yet even this ſo defective and imperfect knowledge of the diſeaſes of the brain and nerves, is by no means free from difficulties. For though we know that the brain, or a certain part of it, is hurt, or that it is irritated by a ſwelling, or a pointed bone growing into it, nobody can foretel how great, or what may be the nature of the malady from ſuch a hurt; for examples are not wanting of people who, after loſing a large part of the brain, have recovered and lived a long time; or of thoſe who have perceived no inconvenience from a large portion of that viſcus being corrupted, until at length they have fallen ſuddenly down and died in convulſions.

Another diſeaſe of the internal ſenſes, quite different from theſe, is *fatuity* or *idiotiſm*. Thoſe are called *idiots* who are deſtitute either of judgment or memory, or elſe have theſe faculties unequal to the common offices of life. A kind of idiotiſm is natural and common to all infants; neither is it to be accounted a diſeaſe; but if it laſts beyond the ſtate of infancy, it is a real diſeaſe, and for the moſt part incurable. It has the ſame cauſes with the other diſeaſes of the internal ſenſes: although theſe can ſcarcely be detected by the eye or by the knife of the anatomiſt. It frequently accompanies, or is the effect of, epilepſy. Hence, if the epilepſy derives its origin from cauſes not ſeated in the head, as from worms lodging in the inteſtines, the fatuity may be cured by diſlodging theſe, and removing the epilepſy. It is not unlikely that the fatuity of children, and the dotage of old men, may ariſe from the brain being in the former too ſoft, and in the latter too hard.

The muſcular power may be diſeaſed in a great number of ways. The mobility itſelf may be too great; but this muſt be carefully diſtinguiſhed from vigour. By mobility is meant the eaſe with which the muſcular fibres are excited into contraction. The vigour, on the other hand, is that power with which the contraction is performed. They are ſometimes joined, but more frequently ſeparate, and for the moſt part the exceſſes of each are owing to contrary cauſes.

Too great mobility is when motions are excited by too ſlight a ſtimulus, or when too violent motions are produced by the cuſtomary ſtimulus. A certain habit of body, ſometimes hereditary, renders people liable to this diſeaſe. Women have a greater ſhare

of mobility than men have. Infants have a great deal of mobility, often too great; youth has leſs than infancy, but more than man's eſtate; though old age has commonly too little. A lazy, ſedentary life, too full diet, a ſuppreſſion of the uſual evacuations, fulneſs of the blood-veſſels, and ſometimes their being ſuddenly emptied, laxity, flaccidity of the ſolids in general, but ſometimes too great a tenſion of the moving fibres, the uſe of diluents, eſpecially when warm, or heat applied in any manner, produce too great mobility. And this may be either general or particular, according as the cauſes have been applied to the whole body or only to a part of it.

Vigour in general is rarely morbid; although ſometimes certain muſcular parts appear to have too great ſtrength. In maniacs and phrenitics an immenſe ſtrength is obſerved in all the muſcles, eſpecially in thoſe that ſerve voluntary motion, which is not unjuſtly reckoned morbid. The reaſon of this exceſs is very obſcure; however, it is plainly to be referred to a diſeaſed ſtate of the brain.

A more frequent and more important exceſs of vigour is obſerved in thoſe muſcular fibres that do not obey the will, ſuch as thoſe which move the blood. Its circulation is thus often increaſed, not without great inconvenience and danger to the patient. But a ſlighter exceſs of this kind, pervading the whole body, renders people apt to receive inflammatory diſeaſes, and is uſually called a *phlogiſtic diatheſis*. But this is better obſerved when local, as in inflammation itſelf.

Too great vigour of the muſcular fibres may ariſe from the nervous power increaſed beyond meaſure, as in mania, phrenitis, or violent affections of the mind; from too great a tenſion of the fibres, by which they more eaſily and vehemently conceive motions, as of the arteries when filled with too much blood; from catching cold, by being expoſed either to cold or heat, as uſually happens in the ſpring; or laſtly, though the nervous power and tenſion of the fibres ſhould not at all be changed, their action may become too great, from a ſtimulus more violent than uſual being applied, or from the uſual ſtimulus if the fibres themſelves have already acquired too great a ſhare of mobility.

The oppoſite to too great mobility is torpor, and to too great vigour is debility. Torpor is ſuch a diminution of mobility as renders the parts unequal to their functions. It ariſes from cauſes directly oppoſite to mobility; ſuch as, in the firſt place, a harder and more rigid contexture of the parts themſelves, or even ſometimes from one too lax and flaccid; from old age; from ſome peculiar temperament of body, ſuch as one phlegmatic, frigid, or inſenſible; too great and inceſſant labour, cold, ſpare diet, and an exhauſted body. This is the evil more to be dreaded, becauſe the powers of the body being deficient, Nature is neither able to make any effort herſelf, nor are the remedies, in other caſes the moſt efficacious, capable of affording her any aſſiſtance.

Debility takes place, when the motion of the muſcles, either vo-

luntary or involuntary, is not performed with ſufficient ſtrength. A greater or leſſer ſhare of debility, either general or of ſome particular part, accompanies almoſt all diſeaſes, and is indeed no ſmall part of them: for it is hardly poſſible that a diſeaſe can ſubſiſt for length of time without inducing ſome degree of debility. When a ſtate of debility is induced, it renders a man obnoxious to innumerable diſorders, and throws him as it were defenceleſs in their way. It often depends on the original ſtructure of the body, ſo that it can be corrected neither by regimen nor medicines of any kind. A different degree of ſtrength alſo accompanies the different ages of mankind; and thus in ſome caſes debility cannot be reckoned morbid. But a truly morbid and unwonted debility ariſes from the nervous force being diminiſhed; from diſeaſes of the brain and nerves, or of the muſcles through which they are diſtributed; from a decay of the nerves themſelves; from a want of the due tenſion of the fibres, or the fibres themſelves becoming torpid; from the body exhauſted by ſpare diet, want, evacuation; or laſtly, from diſeaſes affecting the whole body, or ſome particular parts of it.

The higheſt degree of debility, namely, when the ſtrength of the muſcles is altogether or nearly deſtroyed, is called *paralyſis* or *palſy*; and either univerſal, or belonging only to ſome particular muſcles. An univerſal palſy ariſes from diſeaſes of the brain and nerves, ſometimes very obſcure, and not to be diſcovered by the anatomiſt; for the nervous power itſelf is often deficient, even when the ſtructure of the nerves remains unhurt: yet often a compreſſion, obſtruction, or injury of the veſſels, extravaſation of blood, or ſerum, collections of pus, ſwellings, &c. are diſcovered. It frequently ariſes from certain poiſons acting on the nerves; from the fumes of metals; from the diſeaſes of parts, and affections of the muſcles very remote from the brain, as in the colic of Poictou. A palſy of ſingle muſcles, but leſs perfect, often ariſes without any defect of the brain or nerves, from any violent and continued pain, inflammation, too great tenſion, relaxation, reſt, or deſtruction of the contexture of the parts, ſuch as commonly happens after the rheumatiſm, gout, luxations, fractures of the bones, and iſchuria.

An *univerſal* palſy, however, as it is called, ſeldom affects the whole body, even though it ſhould originate from a diſeaſe of the brain. We moſt commonly ſee thoſe who are paralytic affected only on one ſide, which is called an *hemiplegia*. It is ſaid that the ſide of the body oppoſite to the diſeaſed ſide of the brain is moſt commonly affected. If all the parts below the head become paralytic, it is called a *paraplegia*. In theſe diſeaſes, the ſenſes for the moſt part remain; though ſometimes they are aboliſhed, and at others rendered dull. Sometimes, though rarely, and which is an exceeding bad ſymptom, the motion, ſenſation, pulſe, and heat of the paralytic limbs are loſt; in which caſe the arteries themſelves

become paralytic. A palsy of the whole body, as far as regards the voluntary motions, with anæsthesia and sleep, is called an *apoplexy*. This proceeds from some injury of the brain: though a state very similar to it is induced by narcotics, opium, wine itself, or any generous liquor taken to excess; and lastly, by breathing in air corrupted by noxious impregnations, such as a large proportion of carbonic acid, hydrogenous gas, or any similar active aëriform fluid.

Another disease to which muscular motion is liable, and that neither slight nor unfrequent, is called *spasm*. This is a violent and irregular motion of the muscles. Of spasms there are two kinds, the tonic and clonic. The latter is frequently called a *convulsion*; in order to distinguish it from the other, which is more peculiarly called *spasm*.

Spasm therefore is a violent, constant, and preternatural contraction of the muscular fibres; but a convulsion is an unusual and violent contraction alternated with relaxation. People are rendered liable to spasm by too sensible an habit of body, or too great mobility; and hence it is a disease common in women, in infants, and in weak, luxurious, lazy, and plethoric people. It is brought on those already predisposed to it, by any kind of stimulus applied to the brain, or to any nerve, muscle, or nervous part connected with it: of which we have examples in dentition; worms lodged in the intestines, and irritating them; any acrid matter infecting the blood, or much affecting the stomach and intestines; the irritation of any nerve, or of the brain itself, by an exostosis, swelling, too great fulness of the vessels, pain, vehement affections of the mind, sudden evacuation, or poisons admitted into the body. Frequently, however, the malady originates from slight causes, little known, and not easily observed.

Spasm is both the cause and effect, and frequently constitutes the greatest part, of most diseases. It is often very difficult either to be known or cured; because it is so multiform, and produces as many different symptoms as there are organs affected; of which it surprisingly disturbs, impedes, or increases the functions. It is a disease seated in the original stamina of the constitution; and neither to be removed by slight remedies, nor in a short time.

With regard to sleep, its use is sufficiently apparent from the effects which it produces in the body. It restores the powers both of mind and body when exhausted by exercise, giving vigour to the one, and restoring its wonted alacrity to the other. It renders the muscles again active and moveable, after they have become wearied, rigid, painful, and trembling by hard labour. It moderates the quickness of the pulse, which usually increases at night, and brings it back to its morning standard. It seems also to assist digestion of the aliment; lessens both the secretions and excretions; and renders the fluids thicker than otherwise they would be, especially in a body endowed with little sensi-

bility or mobility. Hence ſleep is not only uſeful, but abſolutely neceſſary for preſerving life and health; and is a moſt excellent remedy both for alleviating, and totally removing, a great many diſeaſes.

Want of ſleep is hurtful in a great many different ways, eſpecially to the nervous ſyſtem. It renders the organs of ſenſe both external and internal, as well as thoſe of every kind of motion, unfit for performing their offices. Hence the ſenſations are either aboliſhed, or become imperfect or depraved; and hence imbecility of mind, defect of memory, a kind of delirium, mania itſelf, pain of the head, weakneſs of the joints, an imperfect or inordinate action of the vital organs, quickneſs of pulſe, heat, fever, depraved digeſtion, atrophy, leanneſs, and an increaſe or perturbation of the ſecretions and excretions.

Sleep may be prevented both in healthy and ſick people from various cauſes; ſuch as ſtrong light, noiſe, pain, anger, joy, grief, fear, anxiety, hunger, thirſt, vehement deſire, motion of the body, memory, imagination, intenſe thought, &c. On the other hand, ſleep is brought on by a ſlight impreſſion on the organs of ſenſe, or none at all; by the humming of bees, the noiſe of falling water, cold and inſipid diſcourſe; or laſtly, by ſuch an exerciſe of the memory as is neither too laborious nor diſturbing to the mind.—Too great an impulſe of the blood towards the head, ſuch as often happens in fevers, prevents ſleep: but a free and equal diſtribution of the blood through the whole, eſpecially the extreme parts, frequently brings it on. Whatever weakens the body alſo favours ſleep; and hence various kinds of evacuations, the warm bath, fomentations, ſometimes heat itſelf, are uſeful for promoting it. It alſo comes on eaſily after taking food, or indulging venery; the violent ſenſation being then quieted, and the body itſelf ſomewhat weakened. Cold produces a deep ſleep of long continuance, not eaſily diſturbed, and often terminating in death. Laſtly, there are certain ſubſtances which, when applied to the body, not only do not excite the nervous ſyſtem, but plainly lay us aſleep, and render us unfit for ſenſation: of this kind are thoſe called *narcotics*, as opium and the like; among which alſo we may reckon wine taken in too great quantity. Laſtly, watching itſelf is often the cauſe of ſleep; becauſe, while a man is awake, he always more or leſs exerciſes the organs of his body, by which the nervous influence is diminiſhed, and thus the more violently the body is exerciſed, in the ſame proportion is the perſon under a neceſſity of ſleeping.

Sleep is deficient in many diſeaſes; for there are few which do not excite pain, anxiety, or uneaſineſs, ſufficient to prevent the approach of ſleep, or to diſturb it. Fevers generally cauſe thoſe who labour under them to ſleep ill; as well on account of the uneaſineſs which accompanies this kind of diſeaſes, as by reaſon of the impetus of the blood towards the head being frequently increaſed;

and likewiſe from the ſtomach being diſordered, loaded with meat, or diſtended with drink. Hence alſo we may ſee the reaſon why many hypochondriac and hyſteric patients ſleep ſo ill; becauſe they have a bad digeſtion, and their ſtomach is diſpoſed to receive many though frequently ſlight diſorders; the ſlighteſt of which, however, is ſufficient to deprive the patient of reſt, provided the body be already irritable, and endowed with too great a ſhare of mobility.

Want of ſleep will hurt in diſeaſes as well as in health; and for the ſame reaſon; but in a greater degree, and more quickly, in the former than in the latter; and is therefore not only a very troubleſome ſymptom of itſelf, but often produces other very dangerous ſymptoms.

Too much ſleep, on the other hand, produces many miſchiefs, rendering the whole body weak, torpid, and lazy; and it even almoſt takes away the judgment. It alſo diſturbs the circulation, and diminiſhes moſt of the ſecretions and excretions. Hence plethora, fatneſs, flaccidity, and an inability for the common offices of life. The cauſes of this exceſs are, either the uſual cauſes of ſleep above mentioned increaſed beyond meaſure, or ſome fault in the brain, or a compreſſion of it by an extravaſation of the humours; or ſometimes, as it would ſeem, from great debility produced by an unuſual cauſe, as in thoſe who are recovering from typhous fevers and other diſeaſes. In theſe examples, however, this exceſs of ſleep is by no means hurtful; not even, perhaps, in thoſe caſes where an exceſs of grief continued for a long time, or a great fright, have produced a ſurpriſing and unexpected ſomnolency. Laſtly, many people have accuſtomed themſelves, and that not without a great deal of hurt to their conſtitutions, to ſleep too much. Nor are there examples wanting of ſome who have paſſed whole days, and even months, in ſleep almoſt uninterrupted.

With the manner in which the circulation of the blood is performed, and the various principles of which it is compoſed, we ſuppoſe the reader previouſly informed. As for the diſorders to which the blood and its circulation are ſubject, Dr. Gregory obſerves, that in our younger years, the veins are much more denſe, firm, and ſtrong, than the arteries; but the latter, by reaſon of the continual preſſure upon them, and the ſtrength which they exert, become daily more firm, hard, and ſtrong, until at laſt they equal or exceed the veins themſelves in ſtrength; and it is not uncommon in old men to find ſome part of the arteries converted into an horny ſubſtance, or even into a ſolid bone. Hence, in the ſtate of infancy, the greateſt part of the blood is contained in the arteries, and in old age in the veins; an affair indeed of no ſmall moment, as it ſhows the reaſon in ſome meaſure of the ſtate of increaſe and decreaſe of the body. Beſides, if any diſeaſe happens from too great a quantity of blood, it thence appears that it muſt ſhow itſelf in young ſubjects in

the arteries, and in old ones in the veins; and this is the reaſon of many diſeaſes which accompany certain periods of life.

In moſt, if not in all ſpecies of animals, the arteries of the females are much more lax and capacious when compared with the veins, and the veins much leſs, than in the males of the ſame genus. The deſign of nature in this conformation, is probably that they may be the better able to nouriſh the fœtus in their womb. The ſame likewiſe ſeems to be the reaſon why women are more inclined to plethora than men; and to this greater capacity of the arteries and ſmallneſs of the veins are we to aſcribe that beauty and elegant ſhape of the arms in women, not disfigured or livid with veins as in men.

The blood is alſo diſtributed in various proportions to the different parts of the body, and that proportion too differs at different periods of our lives. At firſt an immenſe quantity is ſent to the head, becauſe that part of the body is firſt to be evolved and fitted for its offices: but as ſoon as the parts begin to make a conſiderable reſiſtance to the efforts of the blood, and the veſſels cannot eaſily be further dilated, it is neceſſarily ſent off to other parts; by which means the reſt of the body increaſes in bulk, and becomes fitted for performing its proper functions. The effect of this change is alſo very ſoon obſerved, namely, when none of the blood paſſes through the navel, and of conſequence a greater quantity is ſent by the iliac arteries to the inferior extremities. Theſe, though ſo ſmall and ſlender in the fœtus, increaſe very ſuddenly; ſo that often, in not many months, the child can not only ſtand on its feet, but even walk tolerably well.

Phyſicians are wont to judge of the ſtate of the circulation by *the pulſe*; which indeed is very various, as well with regard to its frequency, as to the ſtrength and equality of its ſtrokes and intervals. —Its common quickneſs in a healthy grown-up perſon is about 70 ſtrokes in a minute. In a fœtus, perhaps, it is more than double; and in an infant a few months old, hardly leſs than 120. As we grow up, this quickneſs gradually diminiſhes; ſo that in extreme old age it ſometimes does not exceed 50, or is even ſlower. This rule, however, is not without exceptions: for many, eſpecially thoſe of an irritable habit, have the pulſe much quicker; while others, even in the vigour of their age, have the pulſe remarkably ſlow. It is for the moſt part ſomewhat quicker in women than in men.

The pulſe is alſo rendered quicker, both in a healthy and diſeaſed body, by the application of ſtimuli of many different kinds. Exerciſe eſpecially, by accelerating the return of the blood through the veins, increaſes the quickneſs of the pulſe to a ſurpriſing degree. Various kinds of irritations affecting the nervous ſyſtem, as intenſe thinking, paſſions of the mind, pain, heat, ſtimulating medicines, wine, ſpices, &c. likewiſe produce the ſame effect. The acrimony of the blood itſelf alſo is thought to quicken the pulſe.

When a perſon firſt awakes in the morning, the pulſe is ſlow, but becomes quicker by degrees on account of the many irritating matters applied to the body. Its quickneſs is increaſed after taking food, eſpecially of the animal kind, or ſuch as is hot or ſeaſoned with ſpices. In the evening a ſlight fever comes on, for which reſt and ſleep are the remedy. Theſe things, however, are ſcarce to be obſerved in a healthy perſon, but are very evident in one that is feveriſh, eſpecially when the diſeaſe is a hectic.—Again, even debility itſelf often renders the pulſe quicker than uſual; becauſe the ventricle of the heart not being quite emptied, is ſooner dilated again, and of conſequence contracts the ſooner. For this reaſon a phyſician can never judge of the ſtrength of the circulation from the frequency of the pulſe.

Laſtly, in all fevers, however different from one another, the pulſe is found to be too quick, partly perhaps from debility, partly from the acrimony of the fluids, and partly from the repulſion of the blood from the ſurface of the body, and the accumulation of it in the large veſſels where it acts as a ſtimulus; though it muſt be owned, that a great deal of this is obſcure, if not totally unknown; nor in truth are we able to underſtand in what manner the *autocrateia* acts with regard to the frequency of the pulſe.

The pulſe is ſeldom obſerved too *ſlow*, unleſs when the mobility of the body is much diminiſhed, as in decrepid old age, or from a compreſſion or diſeaſe of the brain; but a greater compreſſion of the brain uſually produces a ſtill more remarkable ſlowneſs of the pulſe, as in the hydrocephalus, apoplexy, &c.—Sometimes alſo the pulſe is too ſlow in thoſe who are recovering from tedious fevers. But this is a matter of little moment, and ſeems to be owing to ſome kind of torpor. Indeed it has generally been conſidered as a mark of a thorough and complete ſolution of the fever; for it is commonly obſerved, that when this ſtate of the pulſe takes place, the patient ſeldom ſuffers a relapſe.

While the *frequency* of the pulſe continues the ſame, its ſtrokes may be either full, great, ſtrong, and hard; or ſoft, ſmall, and weak. A full, great, and ſtrong pulſe takes place when the ventricle ſtrongly and completely empties itſelf; throwing out a great quantity of blood into the arteries, which fully diſtends them and ſtimulates them to a ſtrong contraction. A pulſe of this kind is common in ſtrong healthy men, and is ſeldom to be accounted a ſymptom of diſeaſe. But if it be too ſtrong, and ſtrike the finger of the perſon who feels it violently and ſharply, it is called a *hard pulſe*. This hardneſs is produced by a ſudden and violent contraction of the heart and arteries, which diſtends even the remote branches, as thoſe of the wriſt, too ſuddenly and ſmartly, and excites them alſo to ſudden and violent contractions.

A *hard pulſe* therefore denotes too great an action of the heart and arteries. It may ariſe from various cauſes: in the firſt place,

from too great a tenſion of the veſſels; for inſtance, from their being too full, and by that means more prone to motion, and the more fit for receiving violent motions. It may ariſe alſo from too great a denſity and firmneſs of the ſolids; and hence it is moſt frequent in cold countries, among ſtrong robuſt people, and ſuch as are accuſtomed to hard labour. It may likewiſe ariſe from various cauſes irritating the whole nervous ſyſtem, or only the heart and arteries. Laſtly, it accompanies many fevers, as well as moſt inflammatory diſorders, whether the inflammation ariſes from a general ſtimulus applied to the whole body, or from the irritation of particular parts, by degrees extended over the whole body. In ſuch a ſtate of the circulation, the patient frequently ſtands in need of blood-letting, and almoſt always bears it well.

A *ſmall, weak*, and *ſoft* pulſe is generally owing to cauſes oppoſite to the foregoing, and indicates a contrary ſtate of the circulation and nervous ſyſtem. It frequently requires ſtimulants; nor does it generally require blood-letting, or eaſily bear it. Sometimes, however, a pulſe of this kind is obſerved even in the caſe of a dangerous inflammation, of the ſtomach for inſtance, or inteſtines. But in theſe and the like examples, we ought to attend to the nature of the malady, much more than to the ſtate of the pulſe.

The pulſe is ſaid *to intermit*, when the ſtroke does not return after the uſual interval, and perhaps not till after twice, thrice, or four times the uſual ſpace. A pulſe of this kind ſeems to be almoſt natural and conſtant in ſome animals, and is common to ſome men even in the moſt perfect health; and if theſe happen to be ſeized with a fever, the pulſe ſometimes becomes equal, nor can the diſeaſe be removed until the intermiſſion has returned.

Moreover, in ſome people, though the pulſe beats equally while in health, yet the ſlighteſt illneſs makes it intermit; and in others, eſpecially thoſe who have a great deal of mobility in their conſtitutions, ſuch as hypochrondriac and hyſteric people, the intermiſſion of the pulſe is felt, without applying the finger to the artery, merely by the uneaſineſs which they perceive in their breaſts during thoſe intervals in which the pulſe is deficient. An intermittent pulſe likewiſe occurs in many diſeaſes of the breaſt, eſpecially when water is collected in it; and the like happens in the end of all diſeaſes, eſpecially fevers, when the ſtrength is nearly exhauſted, and death approaches, of which it is frequently the forerunner.

An intermitting pulſe therefore ſeems to ariſe from an unequal influx of the nervous power into the heart, or from the decay and exhauſtion of the nervous power, by which means the heart is not able to contract till it has been diſtended beyond its due pitch. Or laſtly, it may ariſe from diſeaſes of the organ itſelf, or the neighbouring parts; from ſwellings, water, &c. preſſing upon them, and impeding the action of the heart: which indeed is a very dangerous diſorder, and almoſt always mortal.

It may not be amiſs, in this place, to introduce Dr. George Fordyce's table of the pulſe, which may not only convey to the reader that able phyſician's ideas on the ſubject, but ſerve alſo as a convenient guide to the young practitioner.

The indications of the pulſe are of great importance in medicine; for by that we can judge of the ſtate of the circulating ſyſtem, the phenomena of diſeaſes, the patient's ſtrength or weakneſs, &c.

It indicates,	by	It is called
1. The ſtrength of the contraction of the heart,	Strength,	Strong.
	Weakneſs,	Weak.
2. The quantity of blood thrown out at each contraction,	Fulneſs,	Full.
	Smallneſs,	Small.
3. The number of contractions,	Frequency,	Frequent.
	Slowneſs,	Slow.
4. The regularity of its action as to ſtrength, quantity, or frequency,	Regularity,	Regular.
	Irregularity,	Irregular.
	Intermiſſion,	Intermittent.
5. The ſtrength of the action of the arteries,	Hardneſs,	Hard.
	Softneſs,	Soft.
	Redoubling,	Redoubling.
	Trembling,	Trembling.
6. The irritability of the veſſels,	Quickneſs,	Quick.
	Regularity,	Regular.
	Slowneſs,	Slow.
7. The medium diameter of the arteries,	Dilatation,	Great.
	Contraction,	Small.
8. The quantity of blood in the veſſels,	Oppreſſion,	Oppreſſed.
	Smallneſs,	Empty.
9. The contraction of the capillaries,	Obſtruction,	Obſtructed.
	Freedom,	Free.

This table needs no explanation; yet it is in fact no eaſy matter, in many caſes, to make the proper diſtinctions. In attempting to decide on the ſtate of the pulſe, it is of great importance, to know the uſual pulſations of the patient when in health; as theſe differ materially in different ſubjects.

Many other variations of the pulſe are enumerated by phyſicians, but moſt of them uncertain, and not confirmed by experience. We ſhall therefore now conſider the motion of the blood, which may be either too great, too ſmall, or irregular.

A *quick* pulſe, *cæteris paribus*, produces a more rapid circulation, becauſe the ſooner that the ventricle of the heart is emptied, the more quickly is the blood thrown into the arteries; and their actions muſt anſwer to this ſtronger ſtimulus. Hence exerciſe, heat, ſtimulants, plethora, every kind of irritation, paſſions of the mind, and fever,

increaſe the circulation. The effect of this increaſe is a diſtenſion of the veſſels, a ſtimulus applied to the whole body, an increaſe of heat, and often a debility. The ſecretion of ſweat is increaſed while the other ſecretions are diminiſhed, and the various functions of the body impeded; thirſt comes on, the appetite is loſt, the fat conſumed, and a diſpoſition to putreſcency introduced. Sometimes the ſmaller veſſels are burſt; whence effuſions of blood and hæmorrhages. But we are by no means to forget, that this violent motion of the blood, however hurtful it may ſeem, is among the beſt remedies made uſe of by nature in curing many diſeaſes.

The motion of the blood is diminiſhed, eſpecially by debility, torpor, the want of irritation or of exerciſe: the ſame thing happens to all the humours, if there be any obſtruction in the veſſels, or any cauſe by which their return is hindered or rendered more difficult. Thus, from the very weight of the blood itſelf, if a perſon has ſtood long on his feet, the humours return more ſlowly from the inferior extremities. Any diſeaſe of the heart and arteries alſo, as an aneuriſm, contraction, oſſification, muſt neceſſarily obſtruct the circulation. The ſame thing happens from obſtructions of the veins, or interrupted reſpiration, by which the paſſage of the blood through the lungs to the left ſide of the heart is impeded.

But, from whatever cauſes this diminution of the circulation takes place, the bad conſequences are perceived chiefly in the veins, becauſe in them the blood always moves more ſlowly than in the arteries. Hence varices, and congeſtions of blood, eſpecially in thoſe parts of the body where the veins are deſtitute of valves, and of conſequence where the motion of the muſcles cannot aſſiſt the circulation. Hence alſo ariſe dropſies from an impeded or languid motion of the blood; becauſe the reſiſtance of the veins being increaſed, the blood is received into them with the greater difficulty, and more of the thin humour is driven into the exhaling veſſels, and by them depoſited in ſuch quantities as cannot be reabſorbed by the lymphatics. Theſe diſeaſes, as well as all others proceeding from defects of the circulation, are alſo more difficult of cure than others, becauſe all the vital powers are weakened at the ſame time.

Another diſorder of the circulation is where the blood is carried to one part of the body in too great quantity, by which means the other parts are deprived of their due proportion. This irregular diſtribution of the vital fluid frequently ariſes from a ſtimulus applied to the part itſelf, or to the brain, or at length acting on the mind, which, according to the laws of ſympathy, produces a certain and definite diſtribution of the blood. It ariſes alſo not unfrequently from a ſpaſm taking place in ſome other parts, which drives the blood out of its ordinary courſe.

In proportion to this irregularity of the circulation are the conſequences; heat, ſwelling, redneſs, inflammation, rupture of veſſels, hæmorrhages, effuſions, deſtruction, corruption, and ſuppuration of

the cellular texture and adjoining parts, &c. Even this evil, however, Nature often converts into an excellent remedy; and phyſicians, following her ſteps, frequently attempt to direct the diſtribution of the blood in particular diſeaſes, well knowing that a change in the diſtribution of the blood is frequently efficacious either for radically curing ſome diſeaſes or relieving their moſt urgent ſymptoms.

Laſtly, ſome diſorders in the motion of the heart itſelf, and thoſe of no ſmall conſequence, remain yet to be taken notice of, namely, *palpitation* and *ſyncope*. A palpitation is a violent and irregular action of the heart, ſuch as for the moſt part is perceived by the patient himſelf, and that not without a great deal of uneaſineſs and oppreſſion at his breaſt; and is alſo manifeſt to the by-ſtanders if they apply their hands, or look at his naked breaſt; the pulſe of the arteries in the mean time being weak, unequal, and intermitting. This is a ſpaſmodic diſorder; and is induced by various cauſes affecting either the nervous ſyſtem in general, or the heart in particular. Every diſeaſe of the organ itſelf, ſuch as a conſtriction of its valves and blood-veſſels, an oſſification, enlargement, or polypus, hindering the free action of the heart, and evacuation of blood from it, are capable of exciting it to violent and unuſual contractions. The ſame effect will alſo follow plethora, or too violent an impulſe of the blood, &c. The heart will likewiſe frequently palpitate from a violent excitement of the nervous ſyſtem, eſpecially where the conſtitution is endowed with a great deal of mobility. Hence palpitations from any affection of the mind, and in hyſteric women. Palpitation may likewiſe ariſe from an affection of the ſtomach, occaſioned by worms, a ſurfeit, flatus, or ſtimulation by various acrid ſubſtances. It frequently alſo accompanies the gout when driven back, or even when a fit is coming on. Sometimes it ariſes from debility, whatever may be the cauſe; frequently from any difficulty in breathing; and many of theſe cauſes may be joined at the ſame time, or ſome of them produce others.

Hence we may ſee why the evil is ſometimes ſlight and of ſhort continuance; at other times altogether incurable, and certainly mortal in a longer or ſhorter time; why it ſometimes returns at intervals, often coming on and being increaſed by every kind of irritation and exerciſe, and ſometimes relieved or totally removed by ſtimulants or exerciſe.

A *ſyncope* is when the action of the heart, and, along with it that of the arteries, is ſuddenly and very much leſſened: whence the animal powers, the ſenſes, and voluntary motions, immediately ceaſe. This may be produced by almoſt all the cauſes of palpitation; becauſe whatever can diſturb and diſorder the motion of the heart, may alſo weaken or ſuſpend it. The vitiated ſtructure of the heart itſelf therefore, violent paſſions of the mind, whether of the depreſſing kind, or thoſe which ſuddenly and vehemently excite, various kinds of nervous diſeaſes, thoſe of the ſtomach, every kind of debility and

evacuation, especially a great loss of blood, excessive and unremitting labour, long watching, heat, pain, many kinds of poisons, &c. produce fainting.

Hence we see, that whatever weakens the motion of the blood through the brain tends to produce fainting; and, on the contrary, whatever tends to augment that motion, also tends to refresh, and prevent the person from fainting. Hence also we see how the mere posture of the body may either bring on or keep off fainting, or remove it after it has already come on. We likewise see how this disorder may sometimes be of little consequence and easily removed; at others very dangerous, not only as a symptom, but even in itself, as sometimes terminating in death; and lastly, how it may be used as a remedy by a skilful physician, and artificially induced, either to free the patient from violent pain, or to stop an immoderate effusion of blood scarce to be restrained by any other method.

With regard to the *disorders of the blood* itself, it may be observed, that the glutinous part of it produces that buff-coloured appearance often seen upon blood drawn from people afflicted with inflammatory disorders, and even sometimes when no such diseases are present. This crust indeed is nothing else than the pure gluten of the blood taking longer time than usual to coagulate, by which means the red particles have an opportunity of falling to the bottom. This indicates no lentor, density, thickness, or tenacity of the blood, as was formerly thought; but rather its thinness, or at least a less tendency in it to coagulate. It arises for the most part from a violent agitation and conquassation of the blood within the body; and hence it accompanies many fevers, all inflammations, sometimes hæmorrhages, exanthemata, plethora, pain, and many irritations. It must, however, be allowed, that in several of these diseases it is rendered highly probable, at least from experiments apparently accurate, that the quantity of the gluten of the blood is really increased in the proportion which it bears to the other parts. This crust, however, is not always to be accounted morbid, as it often happens to the most healthy; and may even be produced or destroyed by the slightest causes while the blood is running from the vein, so that frequently we shall see a very thick and tenacious crust on the blood flowing into one cup, while that which runs into another has little or none at all. In general, however, the appearance of this crust shows, that the patient will bear bloodletting well, though those have been in a great mistake who directed this operation to be repeated till no more crust appeared on the blood.

The glutinous part of the blood also frequently produces those masses called *polypi*, which sometimes take place during life, but more frequently after death, in the large vessels near the heart, or even in the cavities of that organ. Similar masses also are frequently formed in the uterus, and are called *moles*.

The quantity of blood contained in a healthy body is very various, and difficult to be ascertained. Many diseases, however, may arise

from its being either too ſcanty or too abundant. *Too great a quantity of blood* is produced by the uſe of rich, nouriſhing diet, ſtrong drink, accompanied with a good digeſtion; from a lazy, ſedentary life, or much ſleep, eſpecially in thoſe who have been formerly accuſtomed to much exerciſe; with many other cauſes of the ſame kind. It renders the perſon dull, weak, and languid, and ſometimes almoſt totally oppreſſes him; nor are thoſe organs deſtined for moving the blood ſufficient for driving forward ſuch a load. The pulſe ſinks, and ſometimes a ſyncope, vertigo, or palpitation, takes place. More frequently, however, the veſſels are too much diſtended, and ready to be thrown into violent and irregular motions. Hence a diſpoſition to fevers, inflammations, an unequal diſtribution of the blood, unuſual congeſtions, rupture of the veſſels, and hæmorrhages. Moreover, by reaſon of the cloſe connection between the ſanguiferous and the nervous ſyſtem, a fulneſs of blood produces a diſpoſition to ſpaſm and other diſeaſes of that kind.

Hence we may underſtand why a *plethora* is ſometimes accompanied with a weak and ſometimes with a ſtrong and hard pulſe; why it is the cauſe, as well as a part of, ſo many diſtempers; why is the effect of a high ſtate of health, &c.

The *want of a due quantity of blood* is no leſs pernicious than too great an abundance of it. It debilitates the perſon, and renders him unable to perform the proper offices of life; produces a languid circulation, ſyncope, ſpaſms, and, at laſt, death itſelf. In a ſlighter degree of the diſeaſe the body is emaciated through want of nouriſhment, and its functions are vitiated in various ways. It may ariſe from want, bad food, or ſuch as affords little nouriſhment: from bad digeſtion, or the chyle being hindered from paſſing into the blood: from fevers, or other diſeaſes which exhauſt the body and hinder nutrition: or laſtly, from various evacuations, particularly of blood; and that the more eſpecially if they are ſudden, for in ſlow evacuations the veſſels accommodate themſelves ſurpriſingly to the quantity left in them. Beſides, if the body be ſlowly exhauſted, the excretions are leſſened by reaſon of the deficiency of the vital power; ſo that the unuſual expence is eaſily compenſated by the unuſual retention. But if the evacuation happens to be very ſudden and great, it may either prove mortal in a ſhort time, or break the conſtitution to a degree beyond recovery.

By a great and long-continued deficiency of blood, the quality of it alſo is impaired; becauſe the thin part of it is eaſily and ſoon made up; but the glutinous, thick, and red part, not ſo eaſily. Hence the blood becomes thin, pale, ſcarcely capable of coagulation, or of affording a proper ſupport to the body. *Too great thinneſs of the blood* alſo proceeds from uſing much drink, eſpecially of the aqueous kind, ſlender and little nouriſhing diet, a bad digeſtion in the ſtomach; from diſeaſes of the lungs and thoſe organs which elaborate the red part; or from ſuppreſſion of the uſual evacuations of thin humours, as ſweat or urine, induced by cold, a fault of the ſecreting

organs, or by putrefcency. But along with this, other diforders of the blood concur.

A too thin and watery blood makes the face pale, the body weak, languid, and torpid; the folid parts become flaccid from want of nourifhment, and having too great a quantity of water in their compofition. It brings on hydropic effufions of water in all parts of the body, by reafon of the increafed exhalation of that thin fluid which moiftens all the inward parts; partly by reafon of the blood itfelf being in fome meafure diffolved, fo that it paffes out of the veffels more eafily and plentifully than it ought to do; and partly by reafon of the veffels being relaxed beyond their ufual pitch, and not making a proper refiftance. Befides, in this cafe, the lymphatics are fo far from abforbing more than ufual, that, partaking likewife of the general debility, they are fcarce fufficient for performing their proper offices.

Nature, however, has taken care, by the moft fimple means, to provide againft fo many and fo great evils; for neither does the blood fo eafily become thin as fome have imagined, nor when this quality takes place does it want a proper remedy. For almoft inftantly, if the perfon be otherwife in health, the excretions of the thinner matters are greatly augmented, and the whole mafs of blood in a fhort time becomes as thick as formerly.

The oppofite to this, namely, too great a *thicknefs of the blood*, though often fpoken of by phyficians, is very rarely if ever obferved; and thofe fevers and inflammations which have been thought to arife from thence, are now found to originate from other caufes. The following would feem to be the law of the human conftitution. As foon as the blood has attained the due degree of thickneſs, or gone in the leaft beyond it, the excretions are either fuppreffed or diminifhed, the body attracts more moifture from the air, the perfon is thirfty, and drinks as much as is neceffary for diluting the blood. But if water be wanting, and the perfon cannot fatisfy his thirft, then the blood is fo far from being thickened, that, by reafon of a putrefcency begun or augmented, it is much diffolved, becomes acrid, and is with difficulty contained in the veffels.

The *acrimony of the fluids* has afforded a large field for declamation to the fpeculative phyficians, and upon this flender foundation many perplexed and intricate theories have been built. It is certain, indeed, that the blood in a ftate of health has fome fmall fhare of acrimony; and this acrimony, from certain caufes, may be a little increafed fo as to produce various difeafes of a dangerous nature. This we are aſſured of from the increafe of motion in the heart and arteries, and the fimilar augmentation of the action of the fecretory organs, from acrid fubftances taken inwardly. The fame thing alfo appears from the unufual acrimony of the fecreted fluids in fuch cafes, by which the veffels are fometimes greatly ftimulated, and fometimes even quite eroded. Very many acrid fubftances, however,

are daily taken into the ſtomach; ſo that theſe muſt either be corrected in the *primæ viæ*, or changed by digeſtion before they paſs into the blood; or at leaſt by dilution with much water, or being blunted by an admixture with gluten, oil, or inflammable air, they muſt depoſit much of their acrimony, and at laſt be thrown out of the body as noxious ſubſtances. Thus a vaſt quantity of ſalts, acid, alkaline, and neutral, may paſs through the body, without in the leaſt affecting the health; though theſe ſalts, if taken in very large quantity, undiluted, or not thrown out of the body, will do much hurt.

Moreover, even while life continues, putrefaction is going on, and produces much of that ſubſtance called *animal ſalt*; for into this a great part of our food is converted, and paſſes off by the urine. But if this putreſcent diſpoſition be too great, it will produce too large a quantity of animal ſalt; eſpecially if much of any ſaline ſubſtance is otherwiſe thrown into the body without proper dilution: and this kind of diſeaſe is well known to ſailors who have been long at ſea without having an opportunity of getting freſh proviſions.

For this ſpontaneous putreſcency Nature has ſuggeſted a proper remedy, namely, freſh meat, eſpecially of the vegetable and aceſcent kind, and ſuch as is well impregnated with aërial acid, which it may impart to the body. But where this kind of food is wanting, the putrefaction goes on apace, and a very great thinneſs and acrimony of the juices take place; eſpecially if there be alſo a ſcarcity of water, or the excretions which ought to carry the putrid matters out of the body languiſh, either from cold, ſloth, torpor, depreſſing paſſions of the mind, or from the conſtitution being broken by diſeaſes; or laſtly, from too great heat, which always favours putrefaction.

Beſides, it would ſeem, that ſometimes a diſpoſition to putrefaction is much increaſed by the reception of a putrid ferment into the body; of which we have examples in ſome infectious fevers, where the contagion is very much aſſiſted by heat, animal-diet, certain kinds of ſalts, debility, and naſtineſs.

Laſtly, any ſingle part of the body may putrefy from various cauſes, as from inflammation, gangrene, cold, &c. and thus may the whole body be infected; although, for the moſt part, the diſeaſe proves fatal before the corruption has ſpread over the whole body.

But when the maſs of blood begins to putrefy greatly, it not only becomes very acrid, but thin alſo, ſo that it either will not coagulate at all, or ſhows only a ſlight and very looſe craſſamentum. Nay, even the red globules are broke down and deſtroyed; in which caſe it neceſſarily follows, that the blood muſt become very acrid, as well on account of the evolution of the ſalt, as by reaſon of the rancid and putrid gluten, which ſtimulates, and frequently even erodes, the veſſels; producing ſpots, firſt red, then livid and black, tumors, and ulcers ſcarce poſſible to be cured, without firſt removing the putreſcent diſpoſition of the humours. From the ſame cauſes proceed hæmorrhages from every part of the body, hardly

to be reſtrained; a moſt intolerable fetor of the breath and all the excrements; the higheſt debility and laxity of the ſolids; the putrefaction acting as a poiſon to the nervous ſyſtem, and at length bringing on death.

An acrimony of the acid kind never takes place in the human blood, nor in any of the humours ſecreted from it; though one of them, namely the milk, turns acid ſpontaneouſly in a very ſhort time after it is drawn from the breaſt. Neither, indeed, does an alkaline acrimony ever ſeem to take place in the blood. Putreſcency indeed tends this way, and at laſt terminates in it; but ſcarcely while the perſon lives, though the nature of the urine, even while recent, ſeems to be but little diſtant from that of an alkali.

Many kinds of acrimony indeed may exiſt in the blood from too liberal an uſe of ſpices, wine, &c. but of theſe we know nothing certain. We well know, however, that the body is often infected with various kinds of morbid acrimony, which bring on many and dangerous diſeaſes, as the ſmall-pox, meaſles, cancers, lues venerea, &c. of which the origin and manner of acting are very little underſtood, though the effects are abundantly evident. In moſt caſes, nature has taken no leſs care to provide againſt the *acrimony* than againſt the too great *thickneſs* of the blood. Sometimes an antidote is afforded, either by the excitement of thirſt, that the acrid ſubſtance may be diluted with plenty of drink; or by increaſing the evacuations, that it may be thrown out of the body; or laſtly, by exciting various motions and actions of the vital powers, by which it may be either ſubdued, changed, rendered innocent, or expelled from the body by new and unwonted paſſages.

With regard to *reſpiration*, it may be obſtructed from various cauſes ſeated either in the lungs themſelves or the ſurrounding parts. But from whatever cauſe this obſtruction may ariſe, it undoubtedly produces all thoſe diſeaſes which proceed from an interrupted circulation. The lungs themſelves alſo being at length compreſſed, and not ſuffered to dilate ſufficiently, cannot throw off the vapour which ariſes from them; and hence they are frequently oppreſſed with moiſture. At the ſame time they are irritated, ſo that a greater quantity of mucus, and that of a thicker kind than uſual, is ſecreted; by which means the paſſages through which the air enters them are ſtopped up, and a violent cough at length throws off the load.

The reſpiration is alſo ſubject to ſome other diſorders, as a cough and ſneezing; which, though at firſt ſight they may ſeem very dangerous, are not deſtitute of uſe, and may even be reckoned among the moſt ſalutary attempts of nature to relieve the patient. Often, however, they are attended with danger, or very great uneaſineſs; namely, when they are either too violent or exerted in vain. At any rate, it is neceſſary for a phyſician to know the nature, cauſes,

and effects of theſe, that he may be enabled to promote them when neceſſary, to moderate them when too violent, and to ſtop them when noxious or to no purpoſe.

A *cough* is a violent, frequently involuntary, and ſonorous exſpiration, ſuddenly expelling the air with great force through the glottis ſomewhat contracted. The convulſion of the muſcles ſerving for exſpiration, gives a great force to the air, while the contraction of the glottis produces the ſound. It is often long continued, being repeated at certain intervals, during each of which the inſpiration is imperfect and obſtructed by reaſon of the contraction of the glottis. It is excited by any kind of acrid ſubſtance, either chemically or mechanically applied to thoſe paſſages through which the air enters. Theſe are lined with a membrane ſo exceedingly delicate and impatient of ſtimulus, that it cannot even bear the touch of the mildeſt ſubſtance, ſuch as a ſmall drop of water, without throwing the muſcles ſerving for exſpiration into a violent convulſion; the glottis at the ſame time contracting by means of the ſympathy between it and the neighbouring parts. Thus the air is thrown out with ſuch violence, that it drives the irritating ſubſtance along with it; and thus a cough becomes not only uſeful, but abſolutely neceſſary for the preſervation of life, as being able to free the lungs from every kind of irritating ſubſtance or foulneſs, which might ſoon bring on a ſuffocation. Hence a cough is almoſt an inſeparable companion of every inflammation of the lungs, as well as every difficulty in reſpiration; and even frequently accompanies the entrance of the pureſt air when the trachea and bronchiæ are excoriated, or become too ſenſible. Examples alſo are not wanting, where a violent and troubleſome cough has ariſen from an irritation of the nervous ſyſtem, or even of ſome particular part, of the ear, for inſtance, the ſtomach and inteſtines by worms, the liver by inflammation, &c.

Coughing may alſo be voluntarily excited, and may then be managed at pleaſure. Even when involuntary, it may be moderated, or ſuppreſſed, by a contrary effort: though a violent fit of coughing cannot by any means be reſiſted. When it is once excited, the cough goes on till the irritating ſubſtance be expelled, or the ſenſe of irritation aboliſhed, or perhaps overcome by a more uneaſy ſenſation than even the cough itſelf; after which, the irritation again returning at a certain interval, the cough alſo comes on. Hence we are taught a method of allaying and quieting this moſt troubleſome malady, though frequently it is not in our power to remove the cauſe of it altogether.

A very violent cough is often dangerous. For by the retention of the breath, and the ſtrong efforts made in coughing, a great quantity of blood is collected in the lungs, of which the veſſels are diſtended, and frequently broken; and hence there ſometimes happens a violent and even fatal hemorrhage. More frequently, how-

ever, it is the cauſe of a flower, though equally fatal diſeaſe. Nay, a frequent and troubleſome cough, without any great hemorrhage, or even without any hemorrhage at all, may damage the lungs to ſuch a degree, eſpecially if they be of a more tender ſtructure than uſual, as to lay the foundation of a phthiſis almoſt always incurable.

Again, by a long-continued and violent cough, the paſſage of the blood through the lungs being impeded, it muſt neceſſarily flow through the veins towards the head: hence redneſs and lividneſs in the countenance, hemorrhages, palſies, apoplexies, and ſometimes mortal convulſions. Laſtly, by a violent cough the abdominal viſcera are perpetually compreſſed with remarkable violence; and if any part happens to be weaker than uſual, a hernia, prolapſus uteri, abortion, or ſimilar accidents, may happen.

Even when the cough is more gentle, if it happens to be importunate and frequent, although we have nothing of this kind to fear, yet the patient is by no means free from danger; as he is thereby agitated, fatigued, has his conſtitution broken, is deprived of reſt, has a fever brought upon him, his lungs are ſhaken and irritated, digeſtion and all the other functions are impeded, till at laſt he ſinks under a complication of maladies.

Sneezing is ſomewhat akin to cough, as conſiſting of a very full inſpiration, to which ſucceeds a moſt violent exſpiration, by which the air is driven out through the noſtrils with immenſe violence, and ſweeps the paſſage through them as it goes out. It is a convulſion much more violent than a cough, and is beſides very difficult to be ſtopped when once a propenſity to it has taken place. As a cough proceeds from an irritation of the glottis, trachea, bronchia, and lungs, ſo ſneezing ariſes from an irritation of the membrane of the noſtrils, but rarely from ſympathy with any diſtant part. It is ſometimes of ſervice, as well as a cough; though it is alſo ſometimes prejudicial, for the reaſons which have been already aſſigned.

The laſt ſubject neceſſary to be taken notice of here, is that of the diſeaſes ariſing from a bad digeſtion, diſordered motion of the inteſtines, and ſome of the principal ſecretions. The firſt of theſe are ſometimes very troubleſome, though ſeldom dangerous. The principal ſymptoms are oppreſſion, anxiety, pain at the ſtomach; eructations, by reaſon of air extricated from the fermenting aliments, and irritating the ſtomach; nauſea and vomiting, from the irritation and diſtenſion of the ſame organ; the belly ſometimes too coſtive, and ſometimes too looſe; a defect of nouriſhment; a general debility; relaxation of the ſolid parts; too great thinneſs of the fluids; all the functions impeded; pain of the head; vertigo, ſyncope, aſthma, palpitation; great ſinking of the ſpirits, eſpecially if the patient has been of a peculiar conſtitution; ſometimes the gout, ſometimes a dropſy, or a ſlow fever which may prove mortal.

The motion of the inteſtines may be either too great or too little; and hence proceeds either *coſtiveneſs* or looſeneſs. The former is frequently not to be accounted morbid; but, when it is, it may ariſe from the ſtructure of the inteſtines being injured, or from their being ſhut up or obſtructed by ſpaſm or otherwiſe, or from a deficiency of thoſe humours which moiſten the inteſtines; or it may ariſe from mere debility, from a palſy of the fibres perhaps, or from a deficiency of the uſual ſtimulus, of the bile, for inſtance, or from too dry or ſlender a diet.

The conſequences of long-continued coſtiveneſs, are firſt an affection of the alimentary canal, and then of the whole body. The ſtomach is diſeaſed, and does not digeſt the aliments properly; the whole body is left deſtitute of its uſual ſtimulus; the blood is corrupted, perhaps from the reſorption of the putrid matter into it. The circulation through the abdominal viſcera is impeded; hence frequent and irregular congeſtions, varices of the veins, hemorrhoids, &c. Nay, the inteſtines themſelves being overloaded, diſtended, and irritated by an heavy, acrid, and putrid load of aliment or other matters, are excited to new and unuſual contractions, which, if they do not get the better of the obſtruction, bring on tormina, colic, or an iliac paſſion, inflammation, and gangrene, fatal in a very ſhort time.

Looſeneſs, or diarrhœa, is a malady extremely common; being ſometimes a primary diſeaſe, and ſometimes only a ſymptom or an effect of others. Sometimes it is a ſalutary effort of nature, ſuch as the phyſician ought to imitate and bring on by art. It is alſo familiar to infants, and to people of a certain conſtitution; and to them coſtiveneſs is very prejudicial. It may ariſe, in the firſt place, from ſomething taken into the body, or generated in the inteſtines; from a fermentation and corruption of the maſs of aliments; from the bile being abundant and acrid, or from blood or pus poured into the inteſtines; from the inteſtines themſelves being eroded, or deprived of their natural mucus; from the humours being driven from the ſurface of the body towards the inward parts, as by cold, eſpecially when applied to the feet; or from a general corruption of the whole body, as in the phthiſis, hectic, or putrid fever, eſpecially towards the end of theſe diſorders. In fevers it is ſometimes ſalutary, or even puts an end to the diſeaſe altogether, or at leaſt renders it milder: more frequently, however, deriving its origin from putreſcency, it is of no ſervice, but rather exhauſts the ſtrength of the patient. A diarrhœa likewiſe, almoſt incurable, and often mortal in a ſhort time, frequently ariſes after the operation for the fiſtula in ano. Some have their inteſtines ſo extremely weak and moveable, that from the ſlighteſt cauſe, ſuch as catching cold, any violent commotion of the mind, &c. they are ſubject to a violent diarrhœa. Laſtly, whatever be its origin, if it hath continued for a long time, the viſcera are rendered ſo weak and irritable, that the diſeaſe, though often re-

moved, ſtill returns from the ſlighteſt cauſes, and even ſuch as are not eaſily diſcovered.

A diarrhœa proves very pernicious, by hindering digeſtion and the nouriſhment of the body; for the ſtomach is commonly affected, and the aliments paſs through the inteſtines ſo quickly, that they can neither be properly digeſted, nor are the lacteals able to abſorb the chyle from them as they go along. Such a violent evacuation is alſo hurtful by exhauſting the body, and carrying off a great quantity of the nutritious matter from the blood. Neither, indeed, is it only the alimentary maſs which is thrown out ſooner than it ought to be; but at the ſame time, a great quantity of the fluids ſecreted in the inteſtines, ſo that the whole body quickly partakes of the debility.

Sometimes a violent and long-continued diarrhœa riſes to ſuch a height, that the aliment is diſcharged with little or no alteration. Sometimes alſo, though rarely, from a ſimilar cauſe, or from the obſtruction of the meſenteric glands, and its other paſſages into the blood, the chyle itſelf is thrown out like milk along with the excrements; and this diſeaſe is called the *fluxus cæliacus*.

A *dyſentery* is attended with very ſevere gripes in the belly, a frequent deſire of going to ſtool, and vain efforts which excrete nothing beſides the mucus of the inteſtines mixed with a little blood; and is accompanied with exceſſive debility, and frequently with putreſcency and fever. It is thought to ariſe from the conſtriction of ſome part of the inteſtines, of the colon eſpecially: by which means the bowels, though ever ſo much irritated, can paſs nothing; neither can the diſeaſe be removed until the belly has been well purged by proper medicines.

A *teneſmus* is a frequent and inſatiable propenſity to ſtool, without being able to paſs any thing, notwithſtanding the moſt violent efforts. It may be occaſioned by any kind of irritation, either of the rectum itſelf or of the neighbouring parts, by acrid ſubſtances taken into the body; by ſome of the ſtronger purges, eſpecially aloes, which is very difficult of ſolution, and will paſs even to the rectum with very little alteration; by a violent and obſtinate diarrhœa, dyſentery, hæmorrhoids, worms, fiſtula, calculus, ulcer in the bladder, urethra, &c. It is often very pernicious, both from the exceſſive uneaſineſs it occaſions to the patient, and from its exhauſting his ſtrength, by the frequent and vain efforts bringing on a prolapſus ani, and communicating the violent irritation to the neighbouring parts, as the bladder, &c.

A *nauſea and vomiting* are diſorders very common, and owing to almoſt innumerable cauſes; not only to affections of the ſtomach itſelf, but alſo to affections and irritations of the remoteſt parts of the body which may act upon the ſtomach by ſympathy. Every irritation and diſtenſion of that viſcus therefore, a load of crude

aliment, an obſtruction about the pylorus, all acrid ſubſtances taken into it, diſeaſes of the liver, inteſtines, kidneys, uterus, the head, the feet, the ſkin, or indeed the whole body, inflammation, the ſtone, king's evil, ſcirrhus, apoplexy, compreſſion of the brain, fracture of the ſkull, vertigo, ſyncope, violent pain, the gout, eſpecially when repelled, fevers, paſſions of the mind, diſagreeable imaginations or diſcourſes, frequently induce nauſea and vomiting.

Theſe affections are often ſerviceable by freeing the ſtomach from ſomething with which it was overloaded; promoting ſpitting in ſome caſes where the lungs are overcharged with mucus, blood, pus, or water; producing ſweat, and a free and proper diſtribution of blood to the ſurface of the body; partly, perhaps, by the great ſtraining which accompanies vomiting, but rather by that wonderful ſympathy which takes place between the ſtomach and ſkin: and hence, in many diſeaſes, vomiting is a moſt excellent remedy. It is, however, in ſome caſes hurtful, if too violent or too frequently repeated, partly by debilitating and making the ſtomach more eaſily moved; and partly by fatiguing the patient with violent ſtrainings, which occaſion hernias, abortions, &c.

Sometimes we find the motion of the inteſtines totally inverted, from the anus to the mouth; a moſt dangerous diſtemper, which hath obtained the name of the *iliac paſſion*. It moſt frequently ariſes from ſome obſtruction in the alimentary canal hindering the deſcent of the excrements, as ſcirrhus, ſpaſm, inflammation, &c.: though the moſt perfect iliac paſſion takes place without any obſtruction, ſo that clyſters will be vomited; and even after this has continued for ſeveral days, the patients have at length recovered.

A ſlighter degree of the iliac paſſion, namely the inverſion of the periſtaltic motion of the duodenum, always takes place in long continued and violent vomiting, as in ſea-ſickneſs, or when a perſon has taken too large a doſe of an emetic; by which means a vaſt quantity of bile frequently aſcends into the ſtomach, and is diſcharged by vomiting.

An exceſſive vomiting with looſeneſs is called a *cholera*, when the matter diſcharged has a bilious appearance. It ariſes from a very great irritation of the alimentary canal without any obſtruction; and is for the moſt part occaſioned by too great a quantity, or from an acrimony of the bile, from whence it takes its name. It may originate from ſeveral cauſes, as too ſtrong a doſe of an emetic and cathartic medicine, eating too great a quantity of ſummer fruits, &c. and is a very violent malady, often killing the patient in a few hours, unleſs proper remedies be applied in time.

From a ſuppreſſion of any of the ſecretions, or a diſorder of any of the ſecretory organs, many miſchiefs may ariſe. A *diminution of perſpiration* produces plethora, laſſitude, languor, depreſſion of mind, bad digeſtion, loſs of appetite, and even a general corruption of the

humours from the retention of ſuch a quantity of putreſcent matter. —The more ſuddenly the diminution or ſuppreſſion of the perſpiration takes place, the ſooner the miſchief is produced, and the greater it is; not only by retaining the matter which ought to be thrown out, but by repelling the humours from the ſurface of the body, and directing them to other parts; whence fevers, inflammations, congeſtions of the blood, &c. frequently take place.

Thus ſuppreſſion of perſpiration may ariſe from many different cauſes; as from cold ſuddenly applied to the body when very hot; ſometimes from very violent paſſions of the mind; or from ſpaſmodic diſeaſes, as the hyſterics, &c. It may be ſuppreſſed alſo by that kind of conſtriction of the veſſels of the ſkin which is produced by various kinds of fevers, the nature of which has hitherto been but little known.

Exceſſive perſpiration or ſweating is injurious by debilitating the body, relaxing the ſkin, and expoſing the patient to all the evils which ariſe from catching cold. It may even be carried to ſuch a height as to produce fainting and death; though, it muſt be owned, that we cannot eaſily bring examples of people having from this cauſe their blood inſpiſſated, corrupted, or being thence made liable to inflammations and fevers.

A ſuppreſſion of urine is ſtill more dangerous than that of perſpiration, and unleſs relieved in a ſhort time will certainly prove fatal. This diſorder, which is called *iſchuria*, may ariſe from various diſeaſes of the kidneys, ureters, bladder, urethra, &c. Thus any obſtruction or irritation of one or other of the kidneys or ureters, by a ſtone, gravel, mucus, blood, inflammations, ſpaſm, ſuppuration, ſcirrhus, ſwellings of the neighbouring parts, &c. may either prevent the urine from being ſecreted, or may give riſe to a ſcanty or depraved ſecretion, or finally may obſtruct its paſſage into the bladder after it is ſecreted.

The urine alſo, after it has entered the bladder, is there frequently ſuppreſſed, by reaſon of various diſorders to which that organ is liable, as an irritation or inflammation, ſpaſm, acrid ſubſtances injected, or ſympathy with the neighbouring parts; or by reaſon of the texture of the bladder itſelf being deſtroyed, or from a palſy, ſcirrhus, ulcer, &c. in the bladder. Or, laſtly, the urine may be retained in the bladder from a general ſtupor, as from a diſeaſe of the brain, which happens in ſome fevers, when the patient is neither ſenſible of the uſual ſtimulus, nor even of one much greater, ſo that the fibres can ſcarcely be excited to contraction by any means whatever. This, in fevers, is always a bad ſign, and ſometimes even proves fatal.

A ſuppreſſion of urine for any length of time produces an immenſe diſtenſion of the bladder, oppreſſion, uneaſineſs, and pain, not only of the part itſelf, but of the ſurrounding ones, and even of the whole body; a ſpaſm, or inſuperable conſtriction of the

ſphincter; an inflammation, gangrene, or laceration of the bladder itſelf; a violent irritation of the whole habit; then a nauſea, vomiting, vertigo, general ſtupor, and an impregnation of the whole maſs of blood with a humour of an urinous nature, which at laſt being poured out into various cavities of the body, eſpecially of the head, ſoon brings on a deep ſleep, convulſions, and death.

From the ſame cauſes, but acting with leſs force, proceeds that diſeaſe called a *dyſuria*, when the urine paſſes with difficulty and pain, and is frequently red, black, bloody, purulent, mucous and ſandy; the reaſon of all which appearances is very much unknown.—The moſt frequent complaint, however, in making water, is where the patient has a continual and violent deſire of paſſing his urine, while at the ſame time only two or three drops can be paſſed at once, and that not without ſome pain. This is occaſioned, even in healthy people, by ſome acrid ſubſtance taken into the ſtomach; and is very common to old people, who are generally ſubject to diſorders of the kidneys and bladder. It ariſes alſo frequently from a ſtone irritating the bladder, or from an inflammation of it, or its being deprived of its mucus, or this laſt being ſomehow or other corrupted; or laſtly, from certain diſeaſes or ſome particular ſtate of the neighbouring parts, as of the uterus, vagina, urethra, proſtate gland, &c.

Akin to the ſtrangury is an incontinence of urine, when the patient's water either comes away againſt his will, or altogether without his knowledge. This diſorder may ariſe from debility, palſy, an ulcer or wound, or any long-continued and violent irritation of the bladder, eſpecially of its ſphincter, as from a ſtone, a general palſy, or in females, difficult labour injuring the neighbouring parts.—This ſymptom occurs in a great number of diſeaſes, eſpecially in the hydrocephalus.—Sometimes the urine is expelled with violence, either by reaſon of univerſal ſpaſms, or by violent contractions of the muſcles of reſpiration, as in ſneezing, laughter, &c.

Among the diſorders incident to the urine we may reckon the production of calculi, which frequently bring on the moſt excruciating and dangerous diſeaſes.—The urine, beſides the water and ſalts, contains no ſmall ſhare of the glutinous part of the blood already ſomewhat corrupted, and ſtill inclined to farther corruption. Hence the urine even of the moſt healthy people depoſits a ſediment after it has ſtood for ſome time; and though none of this ſediment be formed in an healthy body, yet if the ſmalleſt particle of foreign matter be introduced into the bladder, a cruſt ſoon gathers round it, and it is ſure to become the baſis of a ſtone, which by degrees grows to a very great ſize. It is not unlikely, alſo, that ſome unknown fault of the fluids may contribute to the production of thoſe calculi, as the ſtone is well known to be an hereditary diſeaſe, and to be born with the patient. Calculous perſons alſo are commonly

ſubject to complaints of the ſtomach, eſpecially to an acidity of it; and many have received no little relief from alkaleſcent or alkaline medicines.—From the ſame cauſes may calculi be formed in the kidneys; from which proceed a horrid train of ſymptoms deſcribed in the ſubſequent part of this treatiſe.

It is now found by accurate experiments of the moſt able chemiſts, that urinary calculi do not, as was once ſuppoſed, conſiſt almoſt entirely of an earthy matter. Their principal conſtituent is a peculiar acid approaching more nearly to the phoſphoric found in the bones than to any other. But the acid of calculus being in ſome reſpects peculiar in its nature, has among modern chemiſts obtained a peculiar name, and been diſtinguiſhed by the appellation of the *lithic acid*. It is highly probable that this acid preſent in the circulating maſs, is precipitated and diſengaged by the introduction of other acids, and thus thrown off in greater quantities by the kidneys. Thus then we can underſtand the influence of acids as tending to the generation of calculus, and of alkalies as tending to prevent it.

The laſt diſorder here to be taken notice of is a diſorder of the glands themſelves, owing to ſome kind of obſtruction, and is one of the moſt dreadful diſeaſes incident to human nature. Hence happens a great ſwelling and ſurpriſing hardneſs, not only without pain, but ſometimes even with a diminution of ſenſation in the part affected; and when the gland is thus affected, it is called a *ſcirrhus*. Sometimes it remains in this ſtate for a long time; but ſooner or later produces the moſt excruciating torment. By degrees it is infected with a ſlow and malignant ſuppuration, degenerating into an horrid ulcer, conſuming not only the part itſelf, but eating away the neighbouring ones, and corrupting the whole body with the moſt acrid and incurable poiſon. This diſeaſe is called a *cancer*, of which the cauſes are very little known.

With the organs in both ſexes concerned in the function of generation, and of that function as far as we yet know any thing reſpecting it, the anatomiſt muſt be already well acquainted; and after what has been ſaid of the different functions, and of the morbid affections, to which theſe are ſubjected, we may extend our remarks on the theory of medicine, with mentioning the remarkable verſatility of the human conſtitution; which, more than that of any other animal, is capable of accommodating itſelf to every climate and to all kinds of diet. Hence it is probable that a large proportion of the diſeaſes to which we are ſubjected are produced by ourſelves.

We have thus far proceeded in our taſk under the able guidance of Dr. James Gregory, but we ſhould by no means conſider ourſelves as having completed it, were we not to ſubjoin the luminous and celebrated opinions of the great Dr. Cullen,

who divides the theoretical part of Medicine into three general heads. *Physiology*, which treats of that condition of the human body neceſſary to life and health; *pathology*, which delivers the general doctrine of diſeaſes; and *therapeutics*, which delivers the general doctrine concerning the means of prevention and cure. We ſhall in this place confine ourſelves to the two firſt.

§ 1. In treating of Phyſiology, that great phyſician firſt conſiders the ſolid matter of which our bodies are compoſed, and which he calls the *ſimple ſolid*. Here he differs remarkably from BOERHAAVE; for the latter, following the doctrines of the chemiſts, aſſerted, that the original ſtamina of the human body are fibres compoſed of earthy particles cemented together by a kind of glutinous matter. This cementation is denied by Dr. Cullen, who very juſtly obſerves, that nothing can be deduced from the chemical analyſis of theſe ſolids, unleſs we were able to recompoſe them from the principles to which they are reduced by chemical operations.—All that we can know, therefore, with regard to our ſolid parts, is, that they are formed of water, and a certain matter concreting along with it. The brain is that part of the human body which is firſt formed; and therefore, he is of opinion, that it is the principal or chief organ, upon which the welfare of the body depends. The original ſtamina of the body, he alſo ſuppoſes to be fibrous; and differs from other phyſiologiſts, who ſuppoſe it totally to conſiſt of cellular texture. This laſt, he thinks, is ſuper-added to the fibres. How the nutritious matter is applied to the fibres, in order to extend them in length, or to form a cellular texture on their ſurface, he declares himſelf unable to explain. "It is probable, however," ſays he, "that for a certain time, at its firſt beginning, the growth of animal bodies proceeds in the ſame manner as that of vegetables: but it is evident, that, at a certain period, in the growth of animals, a different economy takes place; and that afterwards the growth ſeems to depend on an extenſion of the arteries in length and wideneſs by the blood propelled into them. It may be ſuppoſed that this extenſion of the arteries is applied to every fibre of the body; and that, by the extenſion of theſe, it gives an opportunity for the application and accretion of the nutritious matter, to the growth therefore of the fibre itſelf, and to the growth of cellular texture on its ſurface. Perhaps the ſame extenſion of the arterial ſyſtem gives occaſion to the ſecretion of fluids, which, poured into the cellular texture already formed, according to the diſpoſition of theſe fluids to concrete more or leſs firmly, gives the different degrees of hardneſs or denſity to be obſerved throughout the body.

"By this extenſion of the arterial ſyſtem, the ſeveral parts of the body are gradually evolved, ſome of them ſooner, others later, as by the conſtitution of the original ſtamina, or after occurrences, they are ſeverally put into ſuch conditions as render them leſs ex-

poſed to the impetus of the blood, and fitted to receive a greater quantity of it. But as the parts by theſe cauſes firſt evolved will increaſe the moſt in the denſity of their ſolid parts, they will therefore more and more reſiſt their former growth; and by the ſame reſiſtance will determine the blood with more force and in greater quantity into the parts then not ſo far evolved. Hence the whole ſyſtem will be at length evolved; and every part of the ſolids will, in reſpect of denſity and reſiſtance, be in balance with every other part, and with the forces to which they are ſeverally expoſed.

"The extenſion of the arteries depends upon the reſiſtances which occur to the free tranſmiſſion of the blood through them; and further, from a reſiſtance in the veins. For as a conſiderable portion of the blood does not commonly paſs into the ſmaller branches of the arteries, but muſt paſs very entirely into the veins; ſo theſe, by their capacity conſtantly diminiſhing as they approach nearer to the heart, and by their coats being of a denſity and firmneſs ſufficient to prevent further dilatation, conſiderably reſiſt the free paſſage of the blood from the arteries into them.

"While theſe reſiſtances continue, the arteries, and with them almoſt every fibre of the body, muſt be extended at every ſyſtole of the heart, and with this extenſion the growth of every part will proceed; but as every part, by its receiving an addition of ſolid matter, becomes more denſe and rigid; ſo it is leſs eaſily extended, and perhaps leſs readily receives an accretion of new matter than before. Hence it is, that the more the body grows, it admits of any additional growth the more ſlowly; and unleſs the extending powers increaſe in the ſame proportion with the increaſing denſity of the ſolids, there muſt be a period at which theſe two powers will balance each other, and the growth will proceed no farther. But as it is evident, that the bulk and weight of the heart, and probably therefore its force, does not increaſe with the increaſing bulk of the body, and that the action of the heart is the principal extending power in the ſyſtem; it is alſo plain, that the extending power does not extend in the ſame proportion with the increaſing denſity of the ſolids; and therefore that theſe two powers will, at a certain period, come to balance each other.

"But not only is the force of the heart thus conſtantly diminiſhing with reſpect to the reſiſtance of the arteries, but, though this force were ſtill ſubſiſting, it has, from other cauſes, leſs effect in extending the arteries. The blood is more confined in the arteries, and extends them further in proportion to the reſiſtance of the veins; and this reſiſtance in the veins, and extenſion of the arteries depending upon it, will be more or leſs according to the reſpective denſity of theſe two ſets of veſſels. But it appears from the experiments of Sir Clifton Wintringham, that the denſity and firmneſs of the veins with reſpect to their correſponding arteries is much greater in young animals than in old ones: and

thence it appears, that, during the growth of animals, the arteries are acquiring an increaſe of denſity in a greater proportion than the veins are at the ſame time; and therefore, that the reſiſtance in the veins with reſpect to the arteries muſt be conſtantly diminiſhing; that the veins will therefore receive a greater proportion of blood; that in the ſame proportion the arteries will be leſs extended; and laſtly, that the diminiſhed reſiſtance in the veins concurring with the diminiſhed force of the heart, will the ſooner bring the increaſing rigidity of the arteries, and therefore of every fibre in the body, to be in balance with the extending powers; at leaſt ſo far as to prevent their producing any farther growth.

"This account of the change of the reſiſtance in the arteries and veins, with reſpect to one another, is agreeable to phenomena, which ſhew that the arteries are larger, and contain more blood in proportion to the veins, in young animals than in old; that arterial hæmorrhages occur moſt frequently in young perſons; and that congeſtions in the veins with hæmorrhages, or hydropic effuſions depending upon them, occur moſt frequently in old age.

"It is probable, that the reſiſtance both of arteries and veins goes on increaſing, while the force of the heart is not increaſed at the ſame time: but it appears alſo, that from the diminiſhing force of the heart, and the compreſſion which the ſmaller veſſels are expoſed to from the diſtenſion of the larger, the action of the muſcles, and other cauſes, the number of ſmall veſſels, and therefore the capacity of the whole ſyſtem, is conſtantly diminiſhing ſo much, that the heart may ſtill for ſome time be ſufficient for the circulation of the blood. But while the reſiſtances in the veſſels are conſtantly increaſing, the irritability of the moving fibres and the energy of the brain are at the ſame time conſtantly diminiſhing; and therefore the power of the heart muſt at length become unequal to its taſk, the circulation muſt ceaſe, and death enſue.

"The unavoidable death of old perſons is thus in part accounted for; but it is, however, ſtill probable, that the ſame event proceeds chiefly from the decay and total extinction of the excitement or vital power of the nervous ſyſtem, and that from cauſes very much independent of the circulation of the blood, and ariſing in the nervous ſyſtem itſelf, in conſequence of the progreſs of life. This ſeems to be proved by the decay of ſenſe, memory, intellect, and irritability, which conſtantly takes place as life advances beyond a certain period."

Thus the nervous ſyſtem is repreſented as the ſubſtratum or fundamental ſtamina of the whole body; and indeed, as the author explains it, our whole frame is ſo made up of nerves, that the body may be ſaid to contain nothing elſe. The nervous ſyſtem he divides into four parts. 1. The medullary ſubſtance contained in the cranium and vertebral cavity; the whole of which ſeems to

conſiſt of diſtinct fibres, but without the ſeveral fibres being ſeparated from each other by any evident developing membranes. 2. Connected with one part or other of the above ſubſtance are the nerves, in which the ſame medullary ſubſtance is continued; but here more evidently divided into fibres, each of which is ſeparated from the others by an enveloping membrane derived from the pia mater. 3. Parts of the extremities of certain nerves in which the medullary ſubſtance is diveſted of the inveloping membranes from the pia mater, and ſo ſituated, as to be expoſed to the action of certain external bodies, and perhaps ſo framed, as to be affected by the action of certain bodies only. Theſe he calls the *ſentient extremities* of the nerves. 4. Certain extremities of the nerves, ſo framed as to be capable of a peculiar contractility, and in conſequence of their ſituation and attachments, to be, by their contraction, capable of moving moſt of the ſolid and fluid parts of the body. Theſe he calls the *moving extremities of the nerves*; they are commonly called *moving* or *muſcular fibres*. The proof of this laſt poſition we ſhall give in his own words.

"The inherent power (or contractility of the muſcles) is ſuppoſed to be more vigorous, moveable, and permanent, in certain muſcular fibres than in others.

"The inherent power, or the contraction dependent upon it, can be excited by certain applications, made either to the muſcles themſelves, or to the nerves connected with them; and in either caſe, the effects of ſuch application are ſo exactly the ſame as to allow us to conclude that the matter of the nerves and of the muſcular fibres is of the ſame kind.

"The muſcular fibres are ſenſible to various impreſſions, and are otherwiſe organs of the ſenſations of conſciouſneſs. From this alſo it is preſumed, that the muſcular fibres conſiſt of the ſame matter which is the ſubject of ſenſe in other parts of the nervous ſyſtem.

"From the two laſt and other conſiderations, we think it probable, that the muſcular fibres are continuations of the medullary ſubſtance of the brain and nerves, as before alleged.

"Though the muſcular fibres conſiſt of the ſame kind of matter as that in the nerves, the latter ſhew no contractility, becauſe they have not the peculiar organization of the former."

Some phyſiologiſts, particularly Haller, have endeavoured to prove, that the muſcles have a power of motion independent of that which they receive from the nerves; theſe our author refutes by ſome experiments which prove, that both of them continue for an equal length of time, and that when the nerve is irritated, the muſcle contracts, even after death, in the ſame manner as though the muſcular fibres themſelves were irritated.

The doctor next endeavours to ſhew, that the force of coheſion and of the muſcular fibres are the ſame. His words are,

" As the force of cohesion in the muscular fibres of living animals is much greater than in those of dead ones, it is probable from this and other considerations, that the cause of muscular contraction is an increase only of that same power which gives the contractility of the simple solids, and of other inanimate elastics." *Haller Prim. Lin.* 407, 408.

If this is true, it will also explain why the force of cohesion in muscular fibres is greater than that of the medullary fibres in any other part of the nervous system, though both kinds of fibres consist of the same kind of matter. The power above mentioned he conjectures to be an elastic fluid, the motions of which are excited in the nerves, and by their means accumulated in the muscles. The excitement of the fluid in some measure is what is properly called *life*, at least as far as that is corporeal; and its *collapse*, or some diminution of its motion, produces sleep, fainting, &c. or if the collapse is total and irrecoverable, death itself.

With regard to this nervous power, the doctor absolutely denies that it is secreted from the blood. " The most common opinion," says he, " is, that the brain is a secretory organ, which secretes a fluid necessary to the functions of the nervous system; that this fluid is alternately exhausted and recruited, and thereby gives occasion to the alternate states of sleeping and waking. But this supposition is attended with many difficulties. 1. It is probable that the nervous fluid existed in the animal embryo before the action of the heart, or any secretory function, could take place. 2. In animals which during the winter suffer a temporary death, when, by heat, they are again restored to life, the vital power of the solids is restored before the fluidity of the blood. 3. The nervous fluid subsists in the nerves and muscular fibres long after they are separated from the brain, and often when cut into small parts. 4. Though it be true that the brain is a secretory organ, the fluid may be destined to another purpose; and, so far as we understand that purpose, the fluid fit for it must be unfit for the purposes of sense and motion. 5. There is no appearance, in any part of the nervous system, of provision made for an occasional accumulation of the secreted fluid; nor is there any evidence of its actually taking place. 6. The phænomena of sleep and waking do not correspond with such a supposition; as sleep often takes place when the secreted fluid must be copiously present, and waking can be protracted when the fluid is exhausted much beyond its usual measure. 7. Both states are induced by many causes which can hardly be supposed to act upon a secretion.

" A certain compression of the brain can produce a state of the system resembling sleep: but that state is in some respects different from that of ordinary sleep; and it does not by any means appear, that natural and ordinary sleep depends upon any compression of the brain.

" As it is therefore probable that ſleep and waking do not depend upon a different quantity of the matter of the nervous fluid for the time preſent in the ſyſtem, or upon any cauſes interrupting its motion, while the condition of the matter remains the ſame, we are diſpoſed to believe, that thoſe ſtates of ſleep and waking depend upon the nature of the nervous fluid itſelf, capable of becoming more or leſs moveable; that it is chiefly in the brain ſuſceptible of theſe different conditions; and that eſpecially by its condition there, it has its more general effects on the ſyſtem."

Speaking afterwards of the *nutrition of the body*, he ſays, " From the fibrous parts being evidently, in moſt inſtances, parts of the nervous ſyſtem, and from the gradual formation of the fœtus, in which the nervous ſyſtem is firſt formed, we think it probable, that the whole of the fibres in the different parts of the body, are a continuation of the nerves; and this again will lead to the concluſion, that the nouriſhment of the ſoft and homogeneous ſolids every-where is conveyed to it by the nerves.

" This ſuppoſes alſo, what is otherwiſe probable, that the cortical part of the brain, or common origin of the nerves, is a ſecretory organ, in which the gluten of the blood being freed from all ſaline matter before adhering to it, becomes fit for the nouriſhment of the ſolids, and being poured in a ſufficiently diluted ſtate upon the organ of the nerves, it is filtrated along the fibres of theſe; and is thus conveyed to every ſtaminal fibre of the ſyſtem. We ſuppoſe, at the ſame time, that the medullary, or what may be called the *ſolid matter of the nerves*, is, in the living body, conſtantly accompanied with a ſubtile elaſtic fluid, which fits them for being the organs of ſenſe and motion, and which probably is alſo the means by which the nutritious fluid is carried on in the ſubſtance of the nerves from their origin to their extremities.

By this ſyſtem, the blood and its circulation, inſtead of being the principal or vital function, as it was reckoned by Hervey and others, becomes ſo much a ſecondary in the animal economy, that it anſwers little other purpoſe beſides the nutrition of the body. It hath been objected, however, that this fluid is, ſomehow or other, of the utmoſt conſequence; ſince a ſtoppage of the circulation, or a wound in the large veſſels about the heart, proves inſtant death, without waiting for any conſumption of the body by reaſon of its want of nouriſhment. This our author explains by reminding us, that the veſſels muſt neceſſarily be in a certain ſtate of diſtenſion, in order to the mobility of the nervous fluid. The evacuation of all the blood cauſes an irretrievable collapſe of the veſſels, and conſequently of the nervous fluid; upon which death immediately takes place.

It would be mere repetition here to enter into any particular diſquiſition concerning the manner in which each of the functions of

the animal economy are performed. Theſe may be ſeen in the preceding pages, or may be conſulted as they occur in HALLER. What we have already taken notice of will be ſufficient to make this theory of diſeaſes quite intelligible.

§ 2. From the ſketch we have given of Dr. Cullen's phyſiology, it may eaſily be imagined that the diſtinguiſhing characteriſtic of his PATHOLOGY will be, that almoſt all diſeaſes are the conſequence of an affection of the nervous ſyſtem. The nervous power, he thinks, is the ſame with what Hippocrates called *Nature*, and to which he aſcribed ſuch efficacy in removing diſeaſes. This ſubject, however, the latter did not proſecute to any good purpoſe, and his followers ſtill leſs. Eraſiſtratus took no notice of it; and though Galen aſcribed an active power to what he called *Nature*, yet he conſidered this as chiefly concerned in the ſupport of health and the cure of diſeaſes, and referred the operations of nature in the cure of diſeaſes to the ſolids and fluids. In the 15th and 16th centuries the reſtorers of phyſic for a long time overlooked the nervous power; and though the chemiſts introduced their doctrines with regard to the fluids, yet they acquieſced in the former doctrine, which aſcribed to them the ultimate power of the animal economy. Van Helmont, indeed, propoſed a very conſiderable change by his doctrine of the *archæus*; maintaining, that the motion of it had a greater ſhare in the production of diſeaſes than the cauſes aſſigned by the chemiſts and Galeniſts. But this doctrine was delivered in ſuch an obſcure and fanciful manner, that no notice was taken of it; and people continued to imagine that diſeaſes conſiſted in a certain *intemperies* of the fluids, and that *fever* particularly conſiſted in a preternatural heat. After the diſcovery of the circulation, Sylvius de la Boe aſſerted, that fever proceeded from an increaſed velocity of the blood, and that an increaſed quickneſs of the pulſe was its pathognomic. This, however, we are not to admit as true, becauſe then the cure of fevers would conſiſt only in diminiſhing the velocity of the blood, which is very eaſily done; yet ſometimes it is neceſſary to increaſe this velocity, in order to cure the fever. To this doctrine Bellini and Boerhaave added the doctrine of acrimony and a *lentor* or viſcidity in the blood; and this theory continued to be followed till the time of Cullen. Hoffman conſiders fevers as entirely conſiſting in a change of the ſtate of motion in the muſcular fibres, which undoubtedly depends on that of the nervous ſyſtem. The particular cauſe is a *ſpaſm* in the extreme arteries; and the cure conſiſts in a relaxation of that ſpaſm, without regarding the fluids, but only ſo far as they affect the nervous ſyſtem.

The following are the *general phenomena of fevers*, as laid down by Dr. Cullen. The perſon is affected firſt with a languor, or ſenſe of debility, inactivity, and ſluggiſhneſs. The face and extremities become pale; the features ſhrink; the bulk of every

external part is diminiſhed, and the ſkin all over the body appears conſtricted as if by cold. A coldneſs of the extremities may now be perceived by another perſon, though the patient himſelf takes little or no notice of it. At length the cold becomes alſo perceptible to him; firſt, commonly in his back, and thence paſſing over the whole body; though now his ſkin frequently feels warm to another perſon. The ſenſe of cold continually increaſes, and at length produces a tremor in all the limbs, with frequent ſucceſſions or rigors of the trunk of the body. When this ſenſe of cold and its effects have continued for ſome time, they become leſs violent, and alternate, with warm fluſhings. By degrees the cold goes off entirely, and a heat greater than in a natural ſtate prevails all over the body. With this heat the colour of the ſkin returns, and a preternatural redneſs appears, eſpecially in the face. With the heat and redneſs the ſkin is relaxed and ſmoothed, but for ſome time it continues dry. The features of the face, and other parts of the body, recover their uſual ſize, and even become more turgid. When the heat, redneſs, and turgeſcence, have increaſed and continued for ſome time, a moiſture appears upon the face, which, by degrees, becomes a ſweat, and at length prevails over the whole body. As this ſweat continues to flow, the heat of the body abates; the ſweat, after continuing ſome time, gradually ceaſes; the body returns to its uſual temperature, and moſt of the functions are reſtored to their ordinary ſtate.

From theſe general appearances, the paroxyſm may be divided into three different ſtages, viz. the *cold*, the *hot*, and the *ſweating*, ſtages or fits; in each of which a conſiderable change happens to ſeveral of the functions.

On the firſt approach of languor, the pulſe ſometimes become ſlower, and always weaker, than before; and as the ſenſe of cold comes on, it becomes ſmaller, very frequent, and often irregular. As the cold wears off and the heat comes on, the pulſe becomes more regular, hard, and full, and in theſe reſpects increaſes till the ſweat breaks out. As the ſweat flows, the pulſe becomes ſofter and leſs frequent, until the ſweat ceaſing altogether, it returns to its uſual ſtate. The reſpiration during the cold ſtage is ſmall, frequent, and anxious; as the hot ſtage comes on, it becomes fuller, and more free, but is ſtill frequent and anxious, till the flowing of the ſweat relieves the anxiety, and renders the breathing leſs frequent. On the approach of the cold ſtage, the appetite ceaſes, and does not return till either the paroxyſm is at an end, or the ſweat has flowed for ſome time. Generally, however, during the whole paroxyſm, there is not only a want of appetite, but an averſion from all ſolid food, eſpecially of the animal kind. As the cold ſtage advances, naufea and vomiting frequently come on, with the diſcharge of a matter for the moſt part bilious; but when the hot ſtage is pretty well advanced, this ſickneſs abates,

and commonly goes off altogether when the ſweat breaks out. A conſiderable degree of thirſt is commonly felt during the whole courſe of the paroxyſm. In the cold ſtage it ſeems to ariſe from the dryneſs and clammineſs of the mouth and fauces; and during the hot ſtage, from the heat which then prevails: but, as the ſweat flows, the mouth becomes more moiſt, and the thirſt, together with the heat, gradually abates.

In the courſe of the paroxyſm, a conſiderable change is alſo made in the ſtate of the ſecretions. The circumſtances already mentioned ſhew it with regard to the ſaliva, and it is ſtill more remarkable with regard to the urine. In the cold ſtage, the urine is almoſt colourleſs, and without cloud or ſediment. In the hot ſtage it becomes high coloured, but is ſtill without ſediment. After the ſweat has flowed freely, the urine depoſits a ſediment commonly lateritious, and continues to do ſo for ſome time after the paroxyſm is over. Stools ſeldom occur till towards the end of a paroxyſm, except in certain uncommon caſes which are attended throughout with a diarrhœa.

It frequently happens alſo that tumors, ſubſiſting on the ſurface of the body, ſuffer, during the cold ſtage of fevers, a conſiderable diminution of their bulk; but which returns, though not always, during the ſweating ſtage. In like manner, ulcers are ſometimes dried up during the cold ſtage, and return again to diſcharge matter during the ſweating ſtage, or after the paroxyſm is over.

During the cold ſtage, the ſenſibility is often greatly impaired; but when the hot ſtage comes on, the ſenſibility is recovered, and often conſiderably increaſed. When the cold ſtage comes on, the attention and recollection become difficult, and continue ſo, more or leſs, during the whole paroxyſm. Hence ſome confuſion of thought takes place, and often ariſes to a delirium, which ſometimes comes on at the beginning of the cold ſtage, but more frequently not till the hot ſtage is formed. With the cold ſtage alſo comes on a kind of drowſineſs or ſtupor, which ſometimes increaſes to ſuch a degree that the patient becomes comatoſe and almoſt apoplectic. In this ſtage alſo a head-ach ſometimes comes on; but more commonly this is not felt till the hot ſtage is formed, and then it is uſually attended with a throbbing of the temples. The head-ach continues till the ſweat breaks out; but as this flows more freely, that gradually wears off. At the ſame time there are commonly pains of the back, and ſome of the great joints; which are to be derived from the ſame cauſes with the head-ach.

Theſe are the principal phenomena to be obſerved in the paroxyſm of a fever; but it is very ſeldom that the diſeaſe is terminated by a ſingle paroxyſm ſuch as hath been already deſcribed. It more generally happens, that after the ſeries of phenomena above mentioned, and after the patient has been for a certain length of time free from them, the ſame ſeries of pheno-

mena begin again to arise, and to observe the same course as before; and these states of fever and apyrexia often continue to alternate with each other for a great number of times. In these cases, the length of time from the end of one paroxysm to the beginning of another is called an *intermission*; and the length of time from the beginning of one paroxysm to the beginning of another is called an *interval*.

When the disease consists of a number of paroxysms, it is generally to be observed that the intervals between them are nearly equal; but these intervals are of different lengths in different cases. The most usual interval is that of forty-eight hours, which is named the *tertian* period. The next most common is that of seventy-two hours, and is named the *quartan* period. An interval of twenty-four hours is called the *quotidian* period. This last is not unfrequent: but all intervals longer than the quartan are extremely rare, and probably only irregularities of the tertian or quartan periods.

The paroxysms of pure intermittent fevers are always finished in less than twenty-four hours. But it frequently happens that there are fevers which consist of repeated paroxysms without any entire intermission between them: yet in such cases it is observed, that though the hot and sweating stages of the paroxysms do not entirely cease before the twenty-four hours from their beginning have expired, they suffer, however, before that time, a considerable abatement or *remission* of their violence; and at the return of the quotidian period, a paroxysm is in some shape renewed, and runs the same course as before. This constitutes what is called a *remittent fever*. In many cases, however, this remission is not considerable, and perhaps takes place without sweat; the returning paroxysm is not marked by the usual symptoms of a cold stage, but is chiefly known by the aggravation or *exacerbation* of a hot stage; in which cases the disease is called a *continued fever*. In some cases the remissions and exacerbations are so inconsiderable, that they are not easily observed or distinguished; and this has led physicians to imagine that there is a species of fever subsisting for several days together, and seemingly consisting of one paroxysm only. This they have called a *continent* fever; but Dr. Cullen assures us, that, in a long course of practice, he had no opportunity of observing such a fever.

With respect to the form or type of fevers, it may be observed, that the quartan, while it has the longest interval, has, at the same time, the longest and most violent cold stage, but, upon the whole, the shortest paroxysm; the tertian, having a shorter interval than the quartan, has, at the same time, a shorter and less violent cold stage, but a longer paroxysm; and lastly, that the quotidian, with the shortest interval, has the least of a cold stage, but the longest paroxysm. The type of fevers is sometimes changed in their

courſe. When this happens, it is generally in the following manner: both tertians and quartans change into quotidians; quotidians into remittents; and theſe laſt become often of the moſt continued kind; and in all theſe caſes the fever has its paroxyſms protracted longer than uſual, before it changes into a type of more frequent repetition.

From all this the doctor concludes, that every fever conſiſts of repeated paroxyſms, and differs from others only in the circumſtances and repetition of the paroxyſms; and, therefore, that it was allowable to take the paroxyſm of a pure intermittent as an example and model of the whole.

The phenomena of fevers being thus enumerated, Dr. Cullen next proceeds to explain their cauſes. The proximate cauſe, he ſays, has hitherto eluded the reſearches of phyſicians; but as the hot ſtage is ſo conſtantly preceded by a cold one, he preſumes that the cold ſtage is the *cauſe* of the hot one, and, conſequently, that the cauſe of the cold ſtage is the cauſe of all that follows in the courſe of the paroxyſm. The cold ſtage, he obſerves, is always preceded by evident marks of a general debility prevailing in the ſyſtem. The ſmallneſs and weakneſs of the pulſe, the paleneſs and coldneſs of the extreme parts, with the ſhrinking of the whole body, ſufficiently ſhew that the action of the heart and larger arteries is, for the time, extremely weakened. At the ſame time the languor, inactivity, and debility of the animal motions, the imperfect ſenſations, the feeling of cold while the body is truly warm, and ſome other ſymptoms, all ſhew that the energy of the brain itſelf is, on this occaſion, greatly weakened; and as this weakneſs of the action of the heart can hardly be attributed to any other cauſe, it is alſo a proof of the diminiſhed energy of the brain. Another proof of the exiſtence of debility is, that when the paroxyſms of a fever have ceaſed to be repeated, they may be again renewed; and are moſt commonly renewed by the application of debilitating powers.

Hence, ſays our author, it is evident that there are three ſtates which always take place in fever, viz. a ſtate of debility, a ſtate of cold, and a ſtate of heat; and as theſe three ſtates regularly ſucceed each other in the order above mentioned, it is to be preſumed that they are in the ſeries of cauſe and effect with regard to one another. The hot ſtage, he thinks, is an effect of the *vis medicatrix naturæ*, ſo famous in the ſchools of phyſic, and it is probable that many ſymptoms of diſeaſes are owing to the ſame cauſe. To this cauſe he alſo inclines to attribute ſome of the ſymptoms of the cold ſtage, but is obliged to refer them to a law which he ſays exiſts in the animal economy, whereby thoſe powers which have a tendency to hurt and deſtroy the ſyſtem, often excite ſuch motions as are ſuited to obviate the effects of the noxious power. That ſome part of the cold ſtage is owing to the vis medicatrix,

he thinks further probable, becauſe the cold ſtage appears univerſally to be a means of producing the hot, becauſe cold, externally applied, has very often ſimilar effects; and eſpecially becauſe it ſeems to be in proportion to the degree of tremor in the cold ſtage that the hot one proceeds, more or leſs, quickly to a termination of the paroxyſm, and to a more complete ſolution and longer intermiſſion.

In the time of the cold ſtage, there ſeems to be a *ſpaſm* induced every-where on the extremities of the arteries, particularly of thoſe upon the ſurface of the body. This appears from the ſuppreſſion of all the excretions, and from the ſhrinking of the external parts; and though this may in part be attributed to the weaker action of the heart in propelling the blood into the extreme veſſels, yet as theſe ſymptoms often continue after the action of the heart is reſtored, there is reaſon to believe that a ſpaſmodic conſtriction has taken place, and that it ſubſiſts for ſome time, and ſupports the hot ſtage; for this ſtage ceaſes with the flowing of the ſweat, and the return of other excretions, which are marks of the relaxation of veſſels formerly conſtricted.

The idea of fever then may be, that a ſpaſm of the extreme veſſels, however induced, may prove an irritation to the heart and arteries, and that this continues till the ſpaſm is relaxed and overcome. Still, however, it will remain a queſtion what is the cauſe of this ſpaſm; whether it be directly produced by the remote cauſes of fever, or if it is only a part of the vis medicatrix naturæ. The doctor is inclined to the latter opinion, firſt, becauſe it is certain that debility lays the foundation of fever; ſecondly, becauſe, ſuppoſing this uncertain, we can more eaſily perceive how debility induces ſpaſm, than how ſpaſm produces debility, which always more or leſs appears; and thirdly, becauſe we perceive that the degree of ſpaſm formed, and the obſtinacy of its continuance, depend, in many caſes, upon the power of the cauſes inducing debility, and upon the debility induced; for the more powerful the debilitating cauſes, and the greater the debility produced, the paroxyſms are the longer, and the more frequently repeated. From hence, ſays he, we are led to believe, that, together with the *ſpaſm*, there is an *atony* ſubſiſting in the extreme veſſels, and that the relaxation of the ſpaſm requires the reſtoring of the tone and action of theſe.

This may be illuſtrated from conſidering the ſymptoms which take place with reſpect to the functions of the ſtomach in fever, ſuch as the anorexia, nauſea, and vomiting. The connection, or conſent, which we obſerve between the perſpiration and the appetite in healthy perſons, renders it probable, that the tone of the extreme veſſels on the ſurface of the body, and that of the muſcular fibres of the ſtomach, are connected or conſenting with each other; and that therefore in fevers the want of appetite or of tone

in the muſcular fibres of the ſtomach may depend upon the atony of the extreme veſſels on the ſurface of the body. A further proof that in fevers the fibres of the ſtomach are affected with an atony, is the naufea and vomiting which ſo frequently occur, and which ſo commonly depend upon a debility of the ſtomach. That the debility of the ſtomach which produces vomiting depends upon an atony of the extreme veſſels on the ſurface of the body appears particularly from an obſervation of Sydenham. In the attack of the plague, a vomiting happens, which prevents any medicine from remaining upon the ſtomach; and Dr. Sydenham tells us, that he could not overcome this vomiting but by external means, applied to produce a ſweat or determination to the ſurface of the body.

The connection between the ſtate of the ſtomach and that of the extreme veſſels on the ſurface of the body appears from this alſo, that the vomiting, which ſo frequently happens in the cold ſtage of fevers, commonly ceaſes upon the coming on of the hot, and very certainly upon any ſweat coming out. It is indeed probable, that the vomiting in the cold ſtage of fever is one of the means employed by nature for reſtoring the determination to the ſurface of the body; and it is a circumſtance affording a proof, both of this and of the general connection between the ſtomach and ſurface of the body, that emetics thrown into the ſtomach and operating there in the time of the cold ſtage, commonly put an end to it and bring on the hot ſtage. It alſo affords a proof of the ſame connection, that cold water taken into the ſtomach produces an increaſe of heat on the ſurface of the body, and is very often a convenient and effectual means of producing ſweat.

We draw a proof of the ſame connection from this alſo, that cold applied to the ſurface of the body, when it does not ſtop perſpiration, is always a powerful means of exciting appetite. It may alſo be conſidered, whether the fever which ſo conſtantly accompanies the digeſtion of food in the ſtomach be not induced by filling the ſtomach, by relaxing its muſcular fibres, and thereby inducing an atony of the extreme veſſels.

The doctor acknowledges a difficulty in explaining how an atony and ſpaſm can ſubſiſt at the ſame time in the ſame veſſels, but conſiders it as a matter of fact which cannot be denied; and at the ſame time thinks it may be found analogous to what happens upon other occaſions in the ſyſtem, where we often obſerve atony producing ſpaſm. This atony is ſuppoſed to depend upon a diminution of the energy of the brain; and that this diminution takes place in fevers, he concludes, not only from the debility prevailing in ſo many of the functions of the body as already mentioned, but from the ſymptoms peculiar to the brain itſelf.

Delirium is common in fever; and this ſymptom commonly

depends on ſome inequality in the excitement of the brain, or intellectual organ; and hence it may be concluded, that, in fever, it denotes ſome diminution in the energy of the brain. Delirium indeed ſeems often to depend on an increaſed impetus of the blood in the veſſels of the brain, and, therefore, attends phrenitis. It frequently appears alſo in the hot ſtage of fevers, accompanied with a head-ach and throbbing of the temples. But, as the impetus of the blood in the veſſels of the head is often conſiderably increaſed, by exerciſe, external heat, paſſions, and other cauſes, without occaſioning any delirium; it muſt be ſuppoſed, that the ſame impetus, in the caſe of fever, produces delirium, for this reaſon only, that at the ſame time there is ſome cauſe which diminiſhes the energy of the brain, and prevents a free communication between the parts concerned in the intellectual functions. Upon the ſame principles alſo he ſuppoſes that there is another ſpecies of delirium which depends more entirely on the diminiſhed energy of the brain, and may therefore ariſe when there is no unuſual increaſe of the impetus of the blood in the veſſels of the brain. Such ſeems to be the delirium occurring at the beginning of the cold ſtage of fevers, or in the hot ſtage of ſuch fevers as ſhew ſtrong marks of debility in the whole ſyſtem.

"Upon the whole then (ſays he), our doctrine of fever is explicitly this:—The remote cauſes of fever are certain ſedative powers applied to the nervous ſyſtem, which, diminiſhing the energy of the brain, thereby produce a debility in the whole of the functions, and particularly in the action of the extreme veſſels. Such, however, is at the ſame time the nature of the animal economy, that this debility proves an indirect ſtimulus to the ſanguiferous ſyſtem; whence, by the intervention of the cold ſtage and ſpaſm connected with it, the action of the heart and larger arteries is increaſed, and continues ſo till it has had the effect of reſtoring the energy of the brain, of extending this energy to the extreme veſſels, of reſtoring therefore their action, and thereby eſpecially overcoming the ſpaſm affecting them; upon the removing of which, the excretion of ſweat, and other marks of the relaxation of excretories, take place."

The doctor next proceeds to take notice of ſome miſtakes concerning the nature of fever.—It has been ſuppoſed, that a lentor or viſcidity prevailing in the maſs of blood, and ſtagnating in the extreme veſſels, is the cauſe of the cold ſtage of fevers and its conſequences. But there is no evidence of any ſuch viſcidity previouſly ſubſiſting in the fluids; and as it is very improbable that ſuch a ſtate of them can be ſuddenly produced, the ſuddenneſs with which paroxyſms come on renders it more likely that the phenomena depend upon ſome cauſe acting on the nervous ſyſtem, or the primary moving powers of the animal economy.

Another opinion, which has been very univerſally received, is,

that a noxious matter introduced into, or generated in, the body, is the proximate cauſe of fever; and that the increaſed action of the heart and arteries, which makes ſo great a part of the diſeaſe, is an effect of the *vis medicatrix naturæ*, to expel this morbific matter, and particularly to change and concoct it, ſo as to render it altogether innocent, or at leaſt fit for being more eaſily thrown out of the body. This doctrine, however, though of as great antiquity as any in the records of phyſic, and received into every ſchool of medicine, he nevertheleſs conſiders as exceedingly erroneous. Fevers are produced by cold, fear, and other cauſes, with all the eſſential circumſtances belonging to the diſeaſe, and terminating by ſweat, without any evidence or ſuſpicion of morbific matter. There have been fevers ſuddenly cured by an hæmorrhagy ſo moderate as cannot carry out any conſiderable portion of a matter diffuſed over the whole maſs of blood; nor can we conceive how the morbific matter could be collected or determined to paſs off by ſuch an outlet as in that caſe is opened. Even ſuppoſing a morbific matter were preſent, there is no explanation given in what manner the concoction of it is performed; nor is it ſhewn that any ſuch change does in fact take place. In certain caſes it is indeed evident, that a noxious matter is introduced into the body, and proves the cauſe of fever. But even in theſe caſes it appears, that the noxious matter is thrown out again, without having ſuffered any change: that the fever often terminates before the matter is expelled: and that, upon many occaſions, without waiting the ſuppoſed time of concoction, the fever can be cured; and by remedies that do not ſeem to operate upon the fluids, or to produce any evacuation.

But though he thus reaſons againſt the notion of fevers being an effort of nature for concocting and expelling a morbific matter, the doctor by no means denies that the cauſe of fever frequently operates upon the fluids, and particularly produces a putreſcent ſtate of them. This he acknowledges is frequently the caſe: but at the ſame time he maintains, that ſuch a change of the fluids is not commonly the cauſe of fever; that very often it is only an effect; and that there is no reaſon for believing the termination of the fever to depend upon the expulſion of the putrid matter.

Another opinion with regard to intermittent fevers remains ſtill to be mentioned. In theſe fevers a great quantity of bile is commonly thrown out by vomiting; and this is ſo frequently the caſe, that many have ſuppoſed an unuſual quantity of bile, and perhaps a peculiar quality of it, to be the cauſe of intermittent fevers. This, however, does not appear to be well founded. Vomiting, by whatever means excited, if often repeated with violent ſtraining, ſeems to be powerful in emulging the biliary ducts, and commonly throws out a great deal of bile. This will happen eſpecially in the caſe of intermittent fevers. For as, in the ſtate of debility and cold ſtage of theſe fevers, the blood is not propelled in the uſual quan-

tity into the extreme veſſels, and particularly into thoſe on the ſurface of the body, but is accumulated in the veſſels of the internal parts, and particularly in the *vena portarum*; ſo this may occaſion a more copious ſecretion of bile. The circumſtance, however, which chiefly occaſions the appearance of bile in theſe caſes is, the influence of warm climates and ſeaſons. Theſe ſeldom fail to produce a ſtate of the human body, in which the bile is diſpoſed to paſs off by its ſecretories in greater quantity than uſual, and perhaps alſo changed in its quality; as appears from the diſeaſe of the cholera, which ſo frequently occurs in warm ſeaſons. This diſeaſe, however, occurs often without fever: and there are very ſtrong reaſons for ſuppoſing that intermittent fevers for the moſt part ariſe from another cauſe, viz. marſh effluvia; while at the ſame time there is no evidence of their ariſing from the ſtate of the bile alone. The marſh effluvia, however, commonly operate in the ſame ſeaſon that produces the change of the bile; and therefore, conſidering the vomiting and other circumſtances of the intermittent fevers which here concur, it is not ſurpriſing that autumnal intermittents are ſo often attended with effuſions of bile.

The doctor now proceeds to conſider the difference of fever, and its cauſes. With other phyſicians, he ſuppoſes, that in every fever there is a power applied to the body which has a tendency to hurt and deſtroy it, and produces certain motions in it which deviate from the natural ſtate: and, at the ſame time, in every fever which has its full courſe, he ſuppoſes, that, in conſequence of the conſtitution of the animal economy, there are certain motions excited which have a tendency to obviate the effects of the noxious power, or to correct or remove it. Both theſe kinds of motions he conſiders as conſtituting the diſeaſe. The latter, which are of a ſalutary tendency, and conſidered as the operations of the *vis medicatrix naturæ*, he calls the RE-ACTION of the ſyſtem.

From the above doctrine it appears, that, in fever, the circumſtances of debility, ſpaſm, and re-action, are chiefly to be conſidered; and therefore, according as theſe are different in degree, and different in proportion to one another, they will exhibit the chief differences of fever.

Every fever of more than one day's duration, conſiſts of repeated paroxyſms; and in thoſe in which the paroxyſms are diſtinctly obſerved, it is conſtantly to be remarked, that every paroxyſm is finiſhed in leſs than 24 hours: but as we cannot perceive any thing in the cauſe of fevers determining to this, we muſt ſuppoſe it to depend on ſome general law of the animal economy. Such a law ſeems to be that which ſubjects the economy, in many reſpects, to a diurnal revolution. The cauſe of this is uncertain; but the returns of ſleep and watching, of appetites and excretions, and the changes which regularly occur in the ſtate of the pulſe, ſhew ſufficiently, that in the human body a diurnal revolution takes place.

That the paroxyſms are connected with that revolution appears from this, that though the intervals of paroxyſms are different in different caſes, the times of the acceſſion of the paroxyſms are generally fixed to one time of the day; ſo that quotidians come on in the morning, tertians at noon, and quartans in the afternoon. It is ſtill, however, to be remarked, that as quartans and tertians are apt to become quotidians, theſe to paſs into the ſtate of remittents, and theſe to become continued; and that, even in the continued form, daily exacerbations and remiſſions are generally to be obſerved; all this ſhews ſo much the power of diurnal revolution, that when in certain caſes, the daily exacerbations and remiſſions are with difficulty diſtinguiſhed, we may ſtill preſume that the general tendency of the economy prevails; that the diſeaſe ſtill conſiſts of repeated paroxyſms; and, on the whole, that there is no ſuch diſeaſe as hath been commonly called a *continent fever*.

The repetition of the paroxyſms depends on the circumſtances belonging to them when already formed. The longer theſe paroxyſms are protracted, the ſooner they are repeated; and therefore we are to conclude, that the cauſe of the frequent repetition is to be ſought for in the cauſe of the protraction of the paroxſyms. The duration of the whole paroxyſm chiefly depends upon that of the hot ſtage, in which the reaction is operating to take off the ſpaſm formed in the cold ſtage. We may therefore ſuſpect, that the longer duration of the hot ſtage, is owing either to the obſtinacy of the ſpaſm, or to the weakneſs of the reaction; and it is probable, that ſometimes the one and ſometimes the other of theſe circumſtances takes place.

The degree of ſpaſm which takes place in fever may be ſuppoſed different, according the degree of irritability in each particular perſon; and therefore the reaction in fever being given, the paroxyſm, or continuance of the hot ſtage, may be longer or ſhorter, according to the degree of ſpaſm that has been formed. One of the cauſes of the obſtinacy of ſpaſm is, that in inflammatory diſeaſes there is a *diatheſis phlogiſtica* prevailing in the body, and this diatheſis is ſuppoſed by the doctor to conſiſt in an increaſed tone of the whole arterial ſyſtem. When therefore this diatheſis accompanies fever, as it ſometimes does, it may be ſuppoſed to give occaſion to the febrile ſpaſms being formed more ſtrongly, and thereby to produce more protracted paroxſyms. Accordingly we find, that all inflammatory fevers are of the continued kind, and that all the cauſes of the diatheſis phlogiſtica have a tendency to change intermittent into continued fevers. As continued fevers, therefore, are in many caſes attended with the diatheſis phlogiſtica, our author thence concludes, that this is the cauſe of their continued form. In many fevers, however, there is no evidence of any diatheſis phlogiſtica being preſent, or any evidence of more conſiderable ſpaſm; and in ſuch fevers we muſt impute the protraction of the

paroxyſms, and the continued form of the fever, to the weakneſs of reaction. That this cauſe takes place, may be concluded from hence, that in many caſes of fever wherein the ſeparate paroxyſms are the moſt protracted, and the moſt difficultly obſerved we find the moſt conſiderable ſymptoms of a general debility; and therefore it may be concluded, that in ſuch caſes the protracted paroxyſms and continued form depend upon a weaker reaction, owing either to the cauſes of debility applied having been of a more powerful kind, or to circumſtances of the patient's conſtitution favouring their operation.

From the view juſt now given of the cauſes of the protraction of paroxyſms, and therefore of the form of continued fevers ſtrictly ſo called, it ſeems probable, that the remote cauſes of theſe operate by occaſioning either a phlogiſtic diatheſis, or a weaker reaction; for we can obſerve, that the moſt obvious difference of continued fevers depends upon the prevailing of one or other of theſe ſtates.

With regard to the *remote cauſes of fever*, as this has been conſidered as conſiſting chiefly in an increaſed action of the heart and arteries, phyſicians have ſuppoſed, that certain direct ſtimulants, fitted to produce this increaſed action, are the remote cauſes of fever. In many caſes, however, there is no evidence of ſuch ſtimulants being applied: and in the caſes in which they are applied, they either produce only a temporary frequency of pulſe, which cannot be conſidered as a diſeaſe; or if they do produce a permanent febrile ſtate, it is by the intervention of a topical inflammation, which produces a diſeaſe different from what is ſtrictly called a *fever*.

That direct ſtimulants are the remote cauſes of fever ſeems farther improbable, becauſe the ſuppoſition does not account for the phænomena attending the acceſſion of fevers, and becauſe other remote cauſes can with greater certainty be aſſigned. As fevers are ſo generally epidemic, it is probable, that ſome matter floating in the atmoſphere, and applied to the bodies of men, ought to be conſidered as the remote cauſe of fevers. Theſe matters being preſent in the atmoſphere, and acting upon men, may be conſidered either as *Miaſmata*, or as *Contagions*.

Miaſmata may ariſe from various ſources, and be of different kinds: but we know little of their variety or of their ſeveral effects. We know with certainty only one ſpecies of miaſma which can be conſidered as the cauſe of fever; and from the univerſality of this it may be doubted whether there be any other. The miaſma ſo univerſally the cauſe of fever, is that which ariſes from marſhes or moiſt ground acted upon by heat. So many obſervations have now been made with reſpect to this, in ſo many different regions of the earth, that there is neither any doubt of its being in general a cauſe of fever, nor of its being very univerſally the cauſe of intermittent fevers in all their different forms. The ſimilarity of the climate,

ſeaſon, and ſoil, in which intermittents ariſe, and the ſimilarity of the diſeaſes ariſing in different regions, concur in proving that there is one common cauſe of theſe diſeaſes, and that this is the marſh miaſma. What is the particular nature of this miaſma we know not; nor do we certainly know whether it differs in kind or not: but it is probable that it does not; and that it differs only in the degree of its power, or perhaps in its quantity, in a given ſpace.

Of *contagions*, a great variety have been ſuppoſed to exiſt; but this ſeems to be aſſerted without ſufficient evidence. The number of genera and ſpecies of contagious diſeaſes, of the claſs of pyrexiæ, at preſent known, is not very great. Whether there are any belonging to the order of phlegmaſiæ, is doubtful; and though it ſhould be ſuppoſed, it will not much increaſe the number of contagious pyrexiæ: and as each of the contagious diſeaſes hath been found always to retain the ſame character, and to differ only in circumſtances, which may be imputed to ſeaſon, climate, and other external cauſes, or to the peculiar conſtitution of the perſons affected, it may thence be concluded, that in each of theſe ſpecies the contagion is of one ſpecific nature; and that there is one principal, perhaps one common, ſource of ſuch contagions.

It is now well known, that the effluvia ariſing from the living human body, if long confined in the ſame place, without being diffuſed in the atmoſphere, acquire a ſingular virulence; and, in that ſtate, applied to the bodies of men, become the cauſe of a fever which is very contagious. The late obſervations on jail and hoſpital fevers have fully proved the exiſtence of ſuch a cauſe; and it is ſufficiently obvious, that the ſame virulent matter may be produced in many other places. At the ſame time the nature of the fevers ariſing renders it probable, that the virulent ſtate of human effluvia is the common cauſe of ſuch fevers, as they differ only in a ſtate of their ſymptoms; which may be imputed to the circumſtances of ſeaſon, climate, &c. concurring with the contagion, and modifying its force.

With reſpect to theſe contagions, though they are ſpoken of above as a matter floating in the atmoſphere, it is proper to obſerve, that they are never found to act but when they are near to the ſources from whence they ariſe; that is, either near to the bodies of men from which they immediately iſſue, or near to ſome ſubſtances which, as having been near to the bodies of men, are imbued with their effluvia, and in which ſubſtances theſe effluvia are ſometimes retained in an active ſtate for a very long time. The ſubſtances thus imbued with an active matter may be called *fomites*; and the doctor thinks it probable, that contagions, as they ariſe from fomites, are more powerful than as they ariſe immediately from the human body. But though it is probable that fevers generally ariſe from marſh or human effluvia, we cannot with any certainty exclude ſome other remote cauſes which are commonly ſuppoſed to have a

ſhare in producing them. The firſt of theſe cauſes to be taken notice of is, the operation of cold on the human body.

This acts ſo differently in different circumſtances, that it is difficult to give a ſatisfactory explanation of it. In certain circumſtances *cold* has manifeſtly a ſedative power. It can extinguiſh the vital principle entirely, either in particular parts, or through the whole body; and, conſidering how much the vital principle of animals depends upon heat, it cannot be doubted that the power of cold is always more or leſs directly ſedative.—But it is equally manifeſt, that, in certain circumſtances, cold proves a ſtimulus to the living body, and particularly to the ſanguiferous ſyſtem. Beſides the ſedative and ſtimulant powers of cold, it is alſo manifeſtly a powerful aſtringent; cauſing a contraction of the veſſels on the ſurface of the body, and thereby producing paleneſs and a ſuppreſſion of perſpiration. It is likewiſe probable, that this conſtriction is in ſome meaſure communicated to the whole body, and that thereby the application of cold proves a tonic with reſpect to the whole ſyſtem.

Theſe ſeveral effects of cold do not all take place at the ſame time, but may be variouſly combined. The ſtimulant power taking place, obviates the effects that might otherwiſe have ariſen from the ſedative, and in ſome meaſure from thoſe of the aſtringent power. But the ſtimulant and tonic powers of cold are commonly conjoined, and the former perhaps depend in part upon the latter.

In what circumſtances theſe different effects of cold take place, is difficult to determine; but the morbid effects may be obſerved to be chiefly of four kinds. One is a general inflammatory diatheſis of the ſyſtem; which is commonly accompanied with rheumatiſm, or other phlegmaſia. A ſecond is a catarrhal affection; a third is a gangrene; and a fourth is a proper fever. In producing this laſt, the operation of cold generally concurs with that of marſh or human effluvia. In all its operations, cold ſeems to act more powerfully, in proportion as the body, and particularly the vigour of the circulation, is previouſly more weakened.

Beſides cold, there are other powers which ſeem to be the remote cauſes of fever; as fear, intemperance in drinking, exceſs in venery, and other cauſes, which evidently weaken the ſyſtem. But, whether any of theſe ſedative powers be alone the remote cauſe of fever, or if they only concur with the operation of marſh or human effluvia, or if they give an opportunity to the poſitive operations of cold, are queſtions not to be anſwered with certainty.

The *cauſes of death in fevers* are either direct or indirect. The firſt are thoſe which directly attack and deſtroy the vital principle as lodged in the nervous ſyſtem, or deſtroy the organs immediately connected with it. The ſecond, or the indirect cauſes of death, are thoſe which interrupt ſuch functions as are neceſſary to the due continuance and ſupport of the vital principle.

Of theſe general cauſes, thoſe which operate more particularly in fevers ſeem to be, Firſt the violence of reaction, which, either by repeated violent excitements deſtroys the vital power itſelf, or by violence deſtroys the organization of the brain neceſſary to the action of the vital principle, or by the ſame violence deſtroys the organization of the parts more immediately neceſſary to the circulation of the blood. Secondly, the cauſe of death in fevers may be a poiſon, that is, a power capable of deſtroying the vital principle; and this poiſon may be either the miaſma or contagion which was the remote cauſe of the fever, or it may be a putrid matter generated in the courſe of the fever. In both caſes, the operation of ſuch a power appears either as acting chiefly on the nervous ſyſtem, inducing the ſymptoms of debility; or, as acting upon the maſs of blood, inducing a putreſcent ſtate in it, and in the fluids derived from it.

From all this the ſymptoms ſhewing the tendency to death in fevers may be diſcovered, by their being either the ſymptoms of violent reaction, of great debility, or of a ſtrong tendency to putrefaction in the fluids.

The ſymptoms which denote the *violence of reaction*, are, 1. The increaſed force, frequency, and hardneſs of the pulſe. 2. The increaſed heat of the body. 3. Thoſe ſymptoms which are the general marks of an inflammatory diatheſis; and more eſpecially thoſe of a particular determination to the brain, lungs, or other important viſcera. 4. Thoſe which are the marks of the cauſe of violent reaction; that is, of a ſtrong ſpaſm, appearing in the ſuppreſſion of the excretions.

The ſymptoms which denote *a great deal of debility* are—In the animal functions, 1. The weakneſs of the voluntary motions. 2. The irregularity of the voluntary motions depending on their debility. 3. The weakneſs of ſenſation. 4. The weakneſs and irregularity of the intellectual operations. In the vital functions, 1. The weakneſs of the pulſe. 2. The coldneſs or ſhrinking of the extremities. 3. The tendency to a deliquium animi in an erect poſture. 4. The weakneſs of reſpiration.—In the natural functions, 1. The weakneſs of the ſtomach, as appearing in anorexia, nauſea, and vomiting. 2. Involuntary excretions, depending upon a palſy of the ſphincters. 3. Difficult deglutition, depending upon a palſy of the muſcles of the fauces.—The ſymptoms denoting a putreſcent ſtate of the fluids, are, 1. In the ſtomach, the loathing of animal food, nauſea, and vomiting, great thirſt, and a deſire of acids. 2. In the maſs of blood an unuſual fluidity, ſo that when drawn out of the veins it does not coagulate as uſual; hæmorrhagy from different parts, without marks of increaſed impetus; effuſions under the ſkin or cuticle, forming petechiæ, maculæ, and vibices, and effuſions of a yellow ſerum under the cuticle. 3. In the ſtate of excretions, frequent, looſe, and fetid ſtools; high-coloured turbid

urine; fetid ſweats; and the fetor of bliſters. 4. The cadaverous ſmell of the whole body.

Many phyſicians have been of opinion that there is ſomething in the nature of fevers which generally determines them to be of a certain duration; and therefore, that their terminations, whether in health or in death, happen at certain periods of the diſeaſe rather than at others. Theſe periods are called the *Critical Days*. Theſe were carefully obſerved by Hippocrates and the ancients, but have been denied by many to take place in the fevers of theſe northern regions. Dr. Cullen, however, is of opinion, that the doctrine of the ancients, and particularly that of Hippocrates, on this ſubject, was well founded; and that it is juſt and true even with reſpect to the fevers of our climate. For this opinion he gives the following reaſons: 1. Becauſe the animal economy is readily ſubjected to periodical movements, both from its own conſtitution, and from habits which are readily produced in it. 2. Becauſe periodical movements take place in the diſeaſes of the human body with great conſtancy and exactneſs, as in the caſe of intermittent fevers, and many other diſeaſes.

The *critical days*, or thoſe on which the termination of continued fevers is ſuppoſed to happen, are, the *third*, *fifth*, *ſeventh*, *ninth*, *eleventh*, *fourteenth*, *ſeventeenth*, and *twentieth*. We mark none beyond this laſt; becauſe though fevers are ſometimes protracted beyond this period, the inſtances are but rare, and we have not a ſufficient number of obſervations to aſcertain the courſe of them; and likewiſe becauſe it is probable, that in fevers long protracted the movements become leſs exact and regular, and are therefore leſs eaſily obſerved. This appears from the facts laid down by Hippocrates: as, in 163 caſes of fever, no fewer than 107, or more than two thirds of the whole number, terminated on one or other of the eight days above mentioned; none terminated on the ſecond on thirteenth; and upon the eighth, tenth, twelfth, fifteenth, ſixteenth, eighteenth, and nineteenth, there are but 18 terminations, or one-ninth of the whole. But though it muſt be acknowledged that it is the general tendency of the animal-economy to determine the periodical movements in fevers to be chiefly on critical days, it muſt alſo be acknowledged, that in many caſes the regular courſe of it may be diſturbed by particular circumſtances. Thus, though the chief and more remarkable exacerbations in continued fevers happen on the critical days, there are truly exacerbations happening every day; and theſe, from certain cauſes, may become conſiderable and critical.

What determines the periods to be changed about the 11th day, hath not been well underſtood. But the fact is certain: for there is no inſtance of any termination on the 13th; but on the 14th, 17th, and 20th, there are 43 inſtances of termination, and only ſix on all the intermediate days between theſe. Hippocrates in-

deed makes mention of many terminations happening on the 4th day; but, from its inconſiſtency with the general tendency, and ſome other conſiderations, Dr. Cullen is led to think that the terminations on this day are to be looked upon only as irregularities. The opinions of thoſe modern phyſicians who refuſe the prevalence of critical days, he thinks, are to be little regarded. The obſervation of the courſe of continued fevers is difficult and fallacious; and therefore the regulating of that courſe may have eſcaped inattentive and prejudiced obſervers. His own obſervations amount to this: That fevers with moderate ſymptoms, generally caſes of the ſynocha, frequently terminate in nine days or ſooner, and very conſtantly on one or other of the critical days which fall within that period: but it is very rare in this climate, that caſes of either the typhus or ſynochus terminate before the 11th day; and when they do terminate on this day, it is moſt commonly fatal. When protracted beyond this period, their termination hath been very conſtantly obſerved on the 14th, 17th, or 20th day.

In ſuch caſes, the ſalutary terminations are ſeldom attended with any conſiderable evacuation. A ſweating frequently appears, but is ſeldom conſiderable; and critical and deciſive terminations have been hardly ever obſerved attended with vomiting, evacuations by ſtool, or remarkable changes in the urine. The ſolution of the diſeaſe is chiefly to be diſcerned from ſome return of ſleep and appetite, the ceaſing of the delirium, and an abatement of the frequency of the pulſe. By theſe ſymptoms we can often mark a criſis of the diſeaſe; but it ſeldom happens ſuddenly and entirely, and it is moſt commonly from ſome favourable ſymptoms on one critical day that we can announce a more entire ſolution on the next following.

Having thus given a pretty full account of the doctor's general theory of fevers, we now proceed to take notice of his *doctrine of inflammation*.

When any part of the ſurface of the body is affected with unuſual redneſs, heat, pain, and tumor, we name the diſeaſe an *inflammation* or *phlegmaſia*. Theſe ſymptoms of inflammation are never very conſiderable, without the whole ſyſtem being at the ſame time affected with *pyrexia*. The internal parts are ſubject to inflammation as well as the external; and we judge them to be inflamed, when, together with pyrexia, there is a fixed pain in any internal part, attended with ſome interruption in the exerciſe of its functions. We judge of the preſence of inflammation alſo from the ſtate of the blood drawn from the veins. When the blood, after cooling and concreting, ſhews a portion of the gluten ſeparated from the reſt of the maſs, and lying on the ſurface of the craſſamentum; as ſuch ſeparation happens in all caſes of more evident phlegmaſia, ſo in ambiguous caſes, we from this appearance,

joined with other ſymptoms, conclude the preſence of inflammation. At the ſame time it muſt be obſerved, that as ſeveral circumſtances in blood-letting may prevent this ſeparation of gluten from taking place in blood otherwiſe diſpoſed to it, ſo we cannot always conclude, from the want of ſuch appearance, againſt the preſence of inflammation.

The *phænomena of inflammation* all concur in ſhewing, that there is an increaſed impetus of the blood in the veſſels of the part affected; and as at the ſame time the action of the heart is not always conſiderably increaſed, Dr. Cullen ſuppoſes that the increaſed impetus of the blood in the particular part is owing eſpecially to the increaſed action of the veſſels of the part itſelf. The cauſe of this increaſed action is therefore to be enquired after, and is the proximate cauſe of inflammation. In many caſes we can manifeſtly perceive, that inflammation ariſes from the application of ſtimulant ſubſtances to the part. When the application of ſtimulants therefore is evident, we ſeek for no other cauſe of inflammation; but as, in many caſes, ſuch application is neither evident, nor (with any probability) to be ſuppoſed, we muſt in ſuch caſes ſeek for ſome other cauſe of the increaſed impetus of the blood in the veſſels of the part.

Many phyſicians have ſuppoſed, that an obſtruction of the extreme veſſels, any-how produced, may prove a cauſe of inflammation: but many difficulties attend this doctrine.

1. The ſuppoſition of an *error loci* is not at all probable. For the motion of the blood in the extreme veſſels is ſo weak and ſlow, as readily to admit a retrograde courſe of it: and therefore, if a particle of blood ſhould happen to enter a veſſel whoſe branches will not allow its paſſage, it will be moved backwards till it meet with a veſſel fit for tranſmitting it; and the frequent ramifications and anaſtomoſes of the extreme arteries are very favourable to this.

2. The ſuppoſition of a preternatural lentor or viſcidity of the blood, is not well founded; for it is probable, that nature has ſpecially provided againſt a ſtate of the fluids ſo incompatible with the exerciſe of the moſt important functions of the animal economy. While motion continues to prevent any ſeparation of parts, and heat continues to preſerve the fluidity of the more viſcid, there ſeems to be always ſo large a quantity of water preſent, as to give a ſufficient fluidity to the whole.

3. The doctor ſuppoſes that no general lentor ever does take place; becauſe, if it did, it muſt ſhew more conſiderable effects than commonly appear.

4. There are no experiments directly in proof of a preternatural lentor prevailing in the maſs of blood; nor is there any evidence of certain parts of the blood occaſionally acquiring a greater denſity and force of coheſion than ordinary; neither is there any proof

of the denſer or more coherent parts being preſent in the maſs of blood in ſuch greater proportion than uſual, as to occaſion a dangerous ſpiſſitude. The experiments of Dr. Browne Langriſh on this ſubject afford no concluſion, having been made on certain parts of the blood ſeparated from the reſt, without attending to the circumſtances of blood-letting, which very much alter the ſtate of the ſeparation and concretion of the blood drawn out of the veins:

5. In the particular caſe of inflammation, there are ſeveral circumſtances which render it probable that the blood is then more fluid than uſual.

6. Though an obſtruction ſhould be ſuppoſed to take place, it will not be ſufficient for producing the effects appearing in inflammation. An obſtruction of one veſſel does not, as has been imagined, increaſe the velocity of the blood in the neighbouring veſſels which are free; and in fact it appears, from many obſervations and experiments, that conſiderable obſtructions may be formed, and may ſubſiſt, without producing the ſymptoms of inflammation.

Obſtruction, therefore, is not to be conſidered as the cauſe of inflammation; but, at the ſame time, it is probable, that ſome degree of obſtruction does take place in every inflammation. The diſtenſion, pain, redneſs, and tumor, attending inflammation, are only to be explained by ſuppoſing, that the extremities of the arteries do not readily tranſmit the unuſual quantity of blood impelled into them by the increaſed action in the courſe of thoſe veſſels. Such an obſtruction may be ſuppoſed to happen in every caſe of an increaſed impetus of the blood; but it is probable, that, in the caſe of inflammation, there is alſo a preternatural reſiſtance to the free paſſage of the fluids.

From the doctrine of fever we are led to believe, that an increaſed action of the heart and arteries is not ſupported for any length of time by any other means than a ſpaſm affecting the extreme veſſels: and that the ſame ſpaſm takes place in inflammation, ſeems probable from hence, that every conſiderable inflammation is introduced by a cold ſtage, and is accompanied with that and the other circumſtances of pyrexia; and it ſeems alſo probable, that ſomething analogous to this occurs even in the caſe of thoſe inflammations which ſeem leſs conſiderable, and to be purely topical.

From all this, the *nature of inflammation* may be explained in the following manner. Some cauſes of inequality in the diſtribution of the blood may throw an unuſual quantity of it upon particular veſſels, to which it muſt neceſſarily prove a ſtimulus. But, further, it is probable, that, to relieve the congeſtion, the *vis medicatrix naturæ* increaſes ſtill more the action of theſe veſſels, which it effects by the formation of a ſpaſm on their extremities, as in all other febrile diſeaſes. A ſpaſm, therefore, of the extreme

arteries, supporting an increased action in the course of them, may be considered as the proximate cause of inflammation, at least in all cases not arising from direct stimuli applied. That this is the case, seems probable from the consideration of rheumatism. This is a species of inflammation which is often manifestly produced, either by cold applied to over-distended vessels, or by causes of an increased impetus and over-distension in vessels previously constructed. Hence the disease especially appears at seasons liable to frequent and considerable vicissitudes of heat and cold. To this we may add, that the parts of the body most frequently affected with inflammation, are those exposed both to over-distension from a change in the distribution of the fluids, and at the same time to the immediate action of cold. Hence quinseys and pneumonic inflammations are more frequent than any others.

That a spasm of the extreme vessels takes place in inflammation is further to be presumed from what is at the same time the state of the whole arterial system. In every considerable inflammation, though arising in one part only, an affection is communicated to the whole system; in consequence of which, an inflammation is readily produced in other parts besides that first affected. This general affection is well known to physicians under the name of the *diathesis phlogistica*. It appears most commonly in persons of the most rigid fibres; is often manifestly induced by the tonic or astringent powers of cold; is increased by all tonic and stimulant powers applied to the body; is always attended with a hardness of the pulse; and is most effectually taken off by the relaxing powers of blood-letting. From these circumstances it seems probable, that the *diathesis phlogistica* consists in an increased tone, or contractility, and perhaps *contraction*, of the muscular fibres of the whole arterial system. Such a state of the system presumes a spasm of the extreme vessels, and the general state commonly arises from that begun in a particular part; though it be also probable, that the general state may arise and subsist for some time without the obvious inflammation of any particular parts.

If an inflammation is cured while the state and texture of the part remain entire, the disease is said to termine by *resolution*. This happens when the previous congestion and spasm have been in a moderate degree, and the increased impetus of the blood has been sufficient to overcome the spasm, to dilate the vessels, and to remove the congestion, so that the part is restored to its ordinary and healthy state. A resolution takes place also when the increased impetus of the fluids has produced an increased exhalation into the adjoining cellular texture, or an increased excretion in some neighbouring part, and has thereby relieved the congestion in the vessels, and relaxed the spasm of the inflamed part. Lastly, a resolution may take place when the increased impetus of the blood in the whole system occasions such an evacuation as, though

in a diſtant part, may prove ſufficient to take off the phlogiſtic diatheſis of the whole ſyſtem, and thereby relieve the congeſtion and ſpaſm of the particular part affected by inflammation.

The tumor which appears in inflammation may be imputed in part to the congeſtion of fluids in the veſſels; but is owing chiefly to an effuſion of matter into the adjoining cellular texture; and accordingly tumors ſeldom appear but in parts adjoining to a lax cellular texture. If, in this caſe, the matter effuſed be only a larger quantity of the ordinary exhalent fluid, this, when the free circulation in the veſſels is reſtored, will be readily abſorbed, and the ſtate of the part will become the ſame as before: but if the increaſed impetus of the blood in an inflamed part dilate the exhalent veſſels to ſuch a degree that they pour out an entire ſerum, this will not ſo readily be re-abſorbed; and, from the experiments of Sir John Pringle and Mr. Gaber we learn, that under ſtagnation the ſerum may undergo a particular change, by having the gluten preſent in it changed into a white, opaque, moderately viſcid, mild liquor, which we name *pus*. When this change happens in the inflamed part, as it is at the ſame time attended with an abatement of the redneſs, heat, and pain, which formerly diſtinguiſhed the diſeaſe, it is ſaid to be terminated by *ſuppuration*; and an inflamed part containing a collection of pus, is called an *Abſceſs*. In inflammation, the tendency of it to ſuppuration may be diſcovered by the continuance of the inflammation, without the ſymptoms of reſolution; by ſome remiſſion of the pain of diſtenſion; and by the pain being of a throbbing kind, more diſtinctly connected with the pulſation of the arteries; by the pulſe of the arteries being fuller and ſofter; and often by the patient's being afflicted frequently with cold ſhiverings. This happens at no determinate period; and when the tendency is determined, the time neceſſary to a complete ſuppuration is different in different caſes. When pus is completely formed, the pain formerly in the part entirely ceaſes, and a weight is felt in it. If the collection is formed immediately under the ſkin, the tumor becomes pointed, the part becomes ſoft, and the fluctuation of the fluid within can be commonly perceived; and, at the ſame time, the redneſs of the ſkin, which formerly prevailed, is entirely gone.

In abſceſſes, while the pus is formed of one part of the matter which had been effuſed, the other and thinner parts are re-abſorbed; ſo that in the abſceſs, when opened, pus alone appears. This pus, however, is not the converted gluten alone: for the converſion of this being the effect of a particular fermentation, which may affect the ſolid ſubſtance of the part, and perhaps every ſolid of animal bodies; ſo it moſt readily and particularly affects the cellular texture, and thereby a great deal of this is eroded, and forms a part of the pus; and it generally happens alſo, that ſome of the ſmaller red veſſels are eroded, and ſome red blood appears

mixed with the pus in abſceſſes. Hence we may ſee how an abſceſs, when formed, may either ſpread into the cellular texture of the neighbouring parts, or, by eroding the incumbent teguments, be poured out upon the ſurface of the body, and produce an open ulcer.

The *matter of abſceſſes*, and of the ulcers following them, is various, according to the nature of what is effuſed; and which may be, 1. a matter thinner than ſerum; 2. an entire and pure ſerum; 3. a quantity of red globules; 4. a matter furniſhed by particular glands ſeated in the part. Of theſe, the ſecond only affords a proper pus, the effuſion of which, whether in abſceſſes or ulcers, ſeems to be the peculiar effect of an inflammatory ſtate of the veſſels; and from this cauſe it is, that, when ulcers do not produce a proper pus, we in many inſtances bring them to a ſtate of ſuppuration, by the application of ſtimulants exciting inflammation, ſuch as balſams, mercury, copper, &c.

When the matter effuſed into the cellular texture of an inflamed part is tainted with a putrid ferment, this produces, in the effuſed matter, a change approaching more or leſs to a complete putrefaction. When this is in a moderate degree, and affects only the fluids effuſed, with the ſubſtance of the cellular texture, the part is ſaid to be affected with a *Gangrene*; but if the putrefaction affect alſo the veſſels and muſcles of the part, the diſeaſe is ſaid to be a *Sphacelus*.

A gangrene may ariſe from a putrid ferment acting on the matter which is moſt commonly effuſed, and likewiſe from that matter being peculiarly diſpoſed to putrefaction; as particularly ſeems to be the caſe of the red globules of blood effuſed in a large quantity. In a third manner alſo, a gangrene ſeems frequently to ariſe from the violent excitement of the inflammation deſtroying the tone of the veſſels; whereby the whole fluids ſtagnate and run into putrefaction, which taking place in any degree deſtroys further the tone of the veſſels, and ſpreads the gangrene.

A tendency to gangrene may be apprehended from an extreme violence of pain and heat in the inflamed part, and from a great degree of pyrexia attending the inflammation. The actual coming on of it is perceived by a change of colour in the part from a clear to a dark red; by bliſters ariſing upon it; by its becoming ſoft, flaccid, and inſenſible; and by the ceaſing of all pain while theſe appearances take place. As the gangrene proceeds, the colour of the part becomes livid, and, by degrees, quite black; the heat entirely ceaſes, the ſoftneſs and flaccidity of the part increaſes; it loſes its conſiſtence, acquires a cadaverous ſmell, and may then be conſidered as affected with a ſphacelus.

The ſchools of phyſic have commonly reckoned a fourth way in which inflammation may terminate, viz. by a *ſchirrus*, or an indolent hardneſs of the part. This, however, according to Dr.

Cullen, is a rare occurrence; and ſeems not to depend ſo much upon the nature of inflammation as upon the circumſtances of the part affected. Scirrhoſity is chiefly obſerved in glandular parts, and is owing to the parts readily admitting a ſtagnation of the fluids.

Beſides theſe there are the following ways, not commonly taken notice of, in which inflammations terminate. One is, by the effuſion of a portion of the entire maſs of blood, either by means of rupture or anaſtomoſis, into the adjoining cellular texture. This happens eſpecially in inflammations of the lungs, where the effuſed matter, by compreſſing the veſſels, and ſtopping the circulation, occaſions a fatal ſuffocation; and this is perhaps the manner in which the peripneumony moſt commonly proves fatal.—Another kind of termination is that of certain inflammations on the ſurface of the ſkin, when there is poured out under the cuticle a fluid too groſs to paſs through its pores; and which therefore ſeparates it from the ſkin, and raiſes it up in the form of a veſicle containing the effuſed fluid.—A third way is, when the internal viſcera are inflamed, there appears almoſt always upon their ſurface an exſudation, which appears partly in a viſcid concretion upon their ſurface, and partly in a thin ſerous fluid effuſed into the cavities in which the inflamed viſcera are placed. Though theſe appearances very conſtantly accompany thoſe inflammations which have proved fatal, it is however probable, that like circumſtances may attend thoſe inflammations terminated by reſolution, and may contribute to the event, as there are inſtances of a pneumonic inflammation terminating in an hydrothorax.

The remote cauſes of inflammation may be reduced to four heads. 1. The application of ſtimulant ſubſtances, among which are to be reckoned the action of fire, or burning. 2. External violence operating mechanically in wounding, bruiſing, or overſtretching the parts. 3. Extraneous ſubſtances lodged in any part of the body, though they be neither of an acrid quality, nor of a pointed form. 4. Cold, in a certain degree, not ſufficient immediately to produce gangrene.

We cannot perceive that in different caſes of inflammation there is any difference in the ſtate of the proximate cauſe, except in the degree; and though ſome difference of inflammation may ariſe from the difference of its remote cauſes, this is not neceſſary to be taken notice of here; becauſe the different appearances which attend different inflammations may be referred for the moſt part to the difference of the part affected, as will appear when we conſider the ſeveral genera and ſpecies of diſeaſes in the Noſology.

After having availed ourſelves of the celebrated names already announced in the foregoing ſketches of the Theory of Medicine, we might very well have brought the ſubject to a cloſe here; and many of our readers, after the opinion we have openly

avowed, that, "medicine does not admit of so much simplicity" as distinguishes the system of Dr. BROWN, will little expect to see his opinions seriously noticed.

We are persuaded however, that it will be highly acceptable to medical men in general; if we terminate this portion of our work with *an account of the chief peculiarities of the Brunonian System.* At a time when every university in Europe and America, and practitioners in both Indies, are directing their attention, by encomiums or criticisms, to this ingenious theory; when it has begun to be adopted, and openly avowed by many popular writers in the kingdom; it may not be amiss to give a concise view of its principles and peculiarities. Though dignified by its admirers with the title of a system, it will be obvious to the discerning reader, that there are many chasms in it, in common with all other medical systems; and many errors, the correction of which will require much time and observation, if even the fundamental principles of it should be admitted.

The circumstances attending the promulgation of Dr. BROWN'S doctrines, at first in Edinburgh, made the professors and established practitioners unite very generally in opposing them. They might have perceived, that the application of his system to practice was by no means so simple and obvious as the young students who first embraced it imagined; and therefore they might have opposed it from an opinion of its dangerous tendency, as well as a disapprobation of the conduct of its author. This opposition, however, in an University, which, since the death of Boerhaave, has dictated the medical opinions of Europe and America, contributed most effectually to disseminate and establish the new doctrines in question. The medical societies of Edinburgh, instituted for the discussion of theoretical and practical subjects connected with medicine, have an almost irresistible influence over the opinions of its students. In order to defend his own dissertations in these societies, or attack those of his cotemporaries, every member must acquire the ideas and phraseology which prevail at the time; and that too at a period of life when all forcible impressions remain indelible. It must be observed, that the members who attend these societies consist almost entirely of young students, and the presidents are always elected from among them; so that their debates are never over-awed by the presence of professors or established practitioners. It is well known that the society called the Royal Medical Society of Edinburgh were in the habit of discussing medical subjects, on the principles of the spasmodic, or that since called the Cullenian theory, which they had acquired from the works of Hoffman, long before the professors themselves had relinquished the opinions of the Boerhaavian school. It is also true, that, during the latter part of the life of Dr. CULLEN, the Brunonian system was adopted in all these so-

cieties, though the graduates of that univerſity were not allowed to publiſh their theſes upon any other principles than thoſe taught by the profeſſors. The ſyſtem of Brown, adopted and diſſeminated by at leaſt 200 young men annually, from which number the ſurgeons and phyſicians of the navy and army are generally ſupplied, as well as the practitioners of the Eaſt and Weſt Indies, muſt neceſſarily in eight or ten years affect the opinions of the whole medical world. This was really the caſe; but perſons eſtabliſhed in the profeſſion were ſomewhat ſhy and backward in declaring their opinions, till Dr. DARWIN profeſſed himſelf to have been a Brunonian, even before he had heard of Brown's ſyſtem.

The learned were aſhamed to avow the opinions of PARACELSUS, before VAN HELMONT openly adopted them. This reluctance in the human mind, againſt being led by an individual, or being the firſt to join an innovator, appears to ariſe from the unwillingneſs of admitting a dictator, or from the ridicule commonly thrown upon an early apoſtate from eſtabliſhed opinions.

Since the publication of Zoonomia, the language and ſentiments of Brunonianiſm are become common; but what is remarkable, though by no means ſingular, on the occaſion, is, that a majority of the perſons who are become converts to the doctrine are totally unable to recollect when or how they were converted.

But it is our buſineſs to give an account of the ſyſtem, rather than of the means which retarded or promoted its promulgation.

The common opinion reſpecting life, or the vital principle in animals and vegetables, is, that it is entirely diſtinct from the organization of the body in which it reſides; that it is a ſeparate, independent principle, added to the body in ſome early period of its exiſtence, and which there continues unchangeable, and then leaves it at a late period, when it finds the habitation no longer tenable. Dr. Brown, on the contrary, conſiders life as an aſſemblage of actions or effects, which take place in the body in conſequence of a certain prediſpoſition and exciting cauſes; and that the ſtate or quantum of the vital principle, or energy of the ſyſtem, is *perpetually varying*. Thus the abſtraction of heat and food may reduce the powers of life ſo low, that the hot bath, or a glaſs of wine, would be ſufficient to deſtroy the patient. On the other hand, a jail fever, in a few days, may ſo far diminiſh the vital energy, that a warm room, and a bottle of wine a-day, may become neceſſary to preſerve life. In the former caſe, prediſpoſition is ſaid to be morbidly accumulated; in the latter, exhauſted. This ſhort ſtatement includes the baſis of the ſyſtem; but, before we proceed to develope it further, it is neceſſary to explain a few terms which are peculiar to the doctrine, or employed in a peculiar ſenſe.

The degree or ſtate of action, or vigour of the ſyſtem, or energy of the vital principle, which is preſent at any time, is here called

excitement.—It has been ſuggeſted, that Dr. Brown adopted this term, becauſe Dr. Cullen had rendered it faſhionable and familiar to the profeſſion, though he uſed it in a more limited acceptation. We rather ſuppoſe it was preferred on account of its implying here no particular hypotheſis.

That ſtate of the organization of the ſolids and fluids which conſtitutes the prediſpoſition to *excitement*, is denoted by the term *excitability.*—Some of Dr. Brown's followers, who were of opinion that the *excitability* of the ſyſtem depended upon the ſtate of the muſcular fibre alone, employed the word *irritability*, as ſynonymous with *excitability.* But this is objectionable, as being founded on an opinion not generally received.

All thoſe powers, both internal and external, ſuch as the paſſions, heat, food, medicines, contagion, pain, &c. which, by acting upon the excitability, produce *excitement*, are included under the general name of *ſtimuli.*—This term is perhaps more objectionable than either of the preceding, on account of the enormous extenſion of its application. Stimulants and ſedatives were terms that had long been received as antagoniſts in a medical ſenſe. The annihilating one, and making it only a degree of the other, was a ſhock to medical language too great to be acquieſced in on a ſudden. Yet we know, that, in the language of the profeſſion, heat and cold were formerly conſidered as antagoniſts, but now nobody doubts that they are only different degrees of heat.

The ſame error pervades medical language, when ſpeaking of the exciting paſſions; the effects of hope are often imputed to fear, which is only a different degree of hope.

If, for the ſake of avoiding the term *ſtimuli*, Dr. Brown had uſed *exciting powers*, the abſurdity of exciting powers producing depreſſion, in however low a degree applied, would have appeared more objectionable than the generalization of the term. We ſhall ſoon ſee, that the different *degrees* or *intenſities* of ſtimuli may often be ſubſtituted for moſt of the different genera and ſpecies of them, as well as thoſe ſuppoſed *antagoniſts.*

Having explained the chief radical terms peculiar to this ſyſtem, we ſhall next proceed to its developement with reſpect to the operation of ſtimuli upon the excitability, in producing the various degrees of excitement, upon which all health and diſeaſe are made to depend.

1. The *excitability* of the whole body, as well as of particular parts, is by Dr. Brown ſuppoſed to be in a ſtate of *perpetual variation.*

This variation depends upon the time and manner of application, of the internal and external ſtimuli employed.

To illuſtrate this fundamental poſition, we may inſtance the change which takes place in the progreſs of life, independent of accidental circumſtances. In the firſt days after birth, the excitability

of the primæ viæ is such, that a few grains of manna will act as an operative dose. During the first year, the healthy excitement of the system may be supported by a milk diet; and it argues an abuse of stimuli, if a glass of wine does not prove an excessive stimulus before the age of puberty. In advanced life it is well known, that the stimuli just mentioned are far too feeble to produce any obvious effect or excitement. If these ideas were not founded in truth, there is no obvious reason why animals and vegetables might not be immortal.

The accidental circumstances, which we have just alluded to, as most commonly producing variations in the excitability, are, the internal and external stimuli above mentioned. The changes, however, depend almost entirely upon the manner of applying them. It is not the rare or casual operation of stimuli, which produces any permanently important variation in the excitability, but that which, frequently and regularly repeated, changes custom into habit. This may be illustrated by referring to the effects of opium, tobacco, spirits, &c. upon persons accustomed to the use of them. We may also advert to the various states of the excitability at the commencement and during the progress of fevers; in persons properly fed and clothed; and in the same persons, when accidentally deprived of these comforts, &c. &c.

2. The degrees, intensity, or sum of stimuli, which act upon the excitability, and regulate the excitement or energy of the system, ought to be considered in respect both of force and permanency. But, before we can speak of the force or intensity of the existing stimuli at any time, it will be necessary to obviate the inconsistency above alluded to, in calling those things stimuli, or exciting powers, which produce sedative or debilitating effects. If it were possible to exhibit any substance entirely void of heat, or to conceive a total absence of internal stimuli during life; and if we had terms to denote these circumstances, in various degrees of intensity, which is obviously absurd and impossible, then might we employ the terms "*power of cold*," "*directly debilitating powers*," &c. without outraging the common acceptation of terms. The author of this system has been accused of a want of precision in this respect.

No person can doubt, that an abstraction of the chearful passions, of heat, or of necessary food, may directly and immediately produce debility. This is the debility arising from deficient stimuli, and called by Dr. Brown *direct debility*. But as this state of the system is found to be more susceptible of the operation of stimuli than the healthy state, it is inferred that the *excitability is accumulated*; so that *direct debility* and *accumulated excitability* are employed as equivalent terms.

When the energy of the system has been diminished, or debility produced, in consequence of the inordinate application of stimuli,

as of joy, heat, voluntary motion, wine, opium, &c. this debility, as being *conſequent* to unuſual *excitement*, is called *indirect debility*, or *exhauſted excitability*.

According to this ſyſtem, health, and continued vigorous action of the body, depend upon a due balance or proportion between the ſtimuli and excitability, ſo that the latter may neither accumulate nor be exhauſted for many hours together. It therefore follows, that all diſeaſe ariſes from a morbid accumulation or exhauſtion of the excitability, or from direct or indirect debility. And as two different degrees of excitement cannot poſſibly exiſt in the ſame perſon ſimultaneouſly, it is impoſſible that two different conſtitutional diſeaſes ſhould be preſent at the ſame time.

From this ſhort ſketch of the cauſes of health and diſeaſe, according to this ſyſtem, it will be obvious, that the preſervation of the former, or the cure of the latter, muſt principally depend on due application of ſtimuli.

If time and experience had reduced this to fixed rules, nothing would be wanted to the completion of the Brunonian doctrine. In order to explain this part of the ſubject to the younger claſs of our readers, we ſhall adduce a few inſtances.

If a perſon who had been confined for ſeveral years in a cold and dark dungeon, and fed on bread and water, were committed to our care, or cure, for the ſtate of his ſyſtem could not be that of health, though no ſpecific diſeaſe may be actually preſent, we ſhould not expoſe his eyes to the glare of the ſun, his body to the hot bath, his limbs to fatigue, or his ſtomach to fermented liquors. In the practice to be adopted, all are agreed; but the Brunonian explains it in this manner:—The excitability being accumulated in ſo inordinate a degree, the ſtimuli to be adopted muſt not exceed thoſe uſually applied to a new born child, otherwiſe a fatal inflammation, or ſudden death, would enſue. But if the ſtimuli of light, motion, and food, be applied at firſt in very low degrees, the excitability may be gradually brought down to the common ſtandard, and of courſe become capable of bearing the ſtimuli uſually applied to healthy perſons.

If, on the contrary, we found a patient who had been affected for ſeveral days with jail fever, and reduced to as great a degree of debility as could be compatible with life, the whole profeſſion would agree in the mode of treatment; that is, in applying warmth, or bliſters, externally, and in giving brandy, wine, ſpices, opium, æther, bark, &c. in appropriate doſes, internally. The Brunonian juſtifies and explains this practice, by ſtating, that the excitability is ſo rapidly and inordinately exhauſted in theſe fevers, that an excitement compatible with the continuance of life, and reſtoration of health, can alone be produced and ſupported by the moſt powerful and diffuſible ſtimuli.

We perceive, then, that the cure of all diſeaſes, according to this

ſyſtem, conſiſts in proportioning the ſtimuli to the degree of excitability preſent in the patient, till healthy excitement is reſtored.—As a general rule, we are adviſed to apply the ſtimuli in the inverſe ratio of the excitability, in order to produce the moſt ſalutary action, or excitement of the ſyſtem. Dr. Brown and his adherents explain this in the following manner. They ſuppoſe any ſtate of the excitability compatible with the continuance of life in the extremes, or with health in the middle of the ſcale, may be repreſented by the common numbers, from 1 to 19; and that the different degrees of ſtimuli which may be applied to it, to reſtore or preſerve health, may alſo be repreſented by the ſame numbers in the inverted order.—Thus,

	Excitability, or Predispoſition.		Sum of Stimuli.		Product, or Excitement.			
Accumulation.	20	—	0	—	0	death	A	Direct debility.
	19	—	1	—	19	—	B	
	18	—	2	—	36	—	C	
	17	—	3	—	51	—	D	
	16	—	4	—	64	—	E	
	15	—	5	—	75	—	F	
	14	—	6	—	84	—	G	
Health.	13	—	7	—	91	—	H	Limits of health.
	12	—	8	—	96	—	I	
	11	—	9	—	99	—	K	
	10	—	10	—	100	—	L	
	9	—	11	—	99	—	M	
	8	—	12	—	96	—	N	
	7	—	13	—	91	—	O	
Exhauſtion.	6	—	14	—	84	—	P	Indirect debility.
	5	—	15	—	75	—	Q	
	4	—	16	—	64	—	R	
	3	—	17	—	51	—	S	
	2	—	18	—	36	—	T	
	1	—	19	—	19	—	U	
	0	—	20	—	0	death	V	

From (A) to (G) includes thoſe diſeaſes which ariſe from the abſtraction of neceſſary ſtimuli, as ſcurvy, petechiæ ſine febre, &c. and points out the degree of ſtimulus neceſſary to reſtore health.

From (H) to (O) includes thoſe variations which may be conſidered as compatible with health, while the correſponding ſtimuli are applied; but if inordinate or diſproportionate ſtimuli be applied, in any ſtate of the excitement, diſeaſe may be induced.

From (P) to (V) compriſes the degrees of exhauſted excitability, or indirect debility, to the account of which almoſt the whole catalogue muſt be placed; for the diſeaſes ariſing from accumulation

often ſuddenly paſs into thoſe of exhauſtion, in conſequence of exceſſive ſtimuli.

From the above ſtatement of this ſyſtem, as far as reſpects the cure of diſeaſes, it will be obvious, that the doſes, as well as the medicines themſelves, muſt be regulated by the ſtate of the excitability; and that in aſcertaining this ſtate and proportioning the ſtimuli to it, is the only field in which the practitioner can exerciſe his ſkill and judgment.

Profeſſor HUFELAND admits, in concurrence with many other eminent phyſicians in Germany and England, that the inventor of this doctrine was a man of conſiderable genius, and that his theory is replete with novel and excellent ideas; notwithſtanding which, it by no means merits the name of a *ſyſtem*, as it every-where preſents evident chaſms and defects. The *conſtituent* part of medicine, as an art, muſt neceſſarily reſt on the obſervation of facts, or what we call experience; theory is of ſervice merely in the *regulative* part of it, and muſt invariably accommodate itſelf to freſh modifications and changes, whenever experience ſhall pronounce them neceſſary. The Brunonian doctrine appears very plauſible and conſiſtent in theory, but is liable to this material objection, that it frequently and eſſentially diſagrees with matters of fact and experience. The principal point, therefore, to be conſidered is, whether the Brunonian mode of repreſenting ſubjects in medicine has a tendency to facilitate the acquiſition of medical knowledge, and to improve the method of curing diſeaſes?

The learned profeſſor ſeems inclined to put a negative on this queſtion; and obſerves, that Brown's diviſion of diſeaſes into *ſthenic* and *aſthenic*, is only *apparently* ſimple and eaſy, but that it is in *reality* a matter of conſiderable doubt and difficulty to diſtinguiſh them from one another with preciſion; and there are certain diſtempers, in which it is almoſt impoſſible to trace and diſcover the ſymptoms of the ſthenic and aſthenic conſtitution. It is further difficult to eſtabliſh clearly, where there is *direct*, and where there is *indirect* debility; to aſcertain to what degree this ſubſiſts in the body, and determine what ſpecies of ſtimulus ought to be applied to it. In our opinion, medicine can derive little *poſitive* advantage from the multiplication of theories, however ingeniouſly framed, if they be not founded on the baſis of actual obſervation and experience. Inſtead of indulging the modern rage for *generalization*, we ought previouſly to collect a ſufficient number of analogous facts; and, being in poſſeſſion of theſe, we might gradually and cautiouſly venture to reduce them to particular claſſes, orders, &c. But as this reſult preſuppoſes long and attentive inveſtigation, by a cool, perſevering, and unprejudiced mind (circumſtances and qualifications but rarely united in *one* individual), there is little hope of ſeeing a *theory* of medicine or a *Syſtem of Noſology* eſtabliſhed, which, in the preſent progreſſive ſtate of medical and phyſical ſcience, will

be found of such unperishable materials, as to stand the test of future ages.

Whoever is anxious to obtain celebrity, and *really improve the practice of the healing art*, will find it no easy matter to accomplish this desirable end by solitary disquisitions in his study-room: he must range through a circle of patients; examine and consult with them; and these, again, in like manner, with him. Old and experienced practitioners will readily discover whether the author of founder of a system be in fact a stranger to the diseases he attempts to define or arrange; if in only a few instances they espy his weak side, and find his account of the progress of a disease inconsistent with the path of nature, his pretensions are instantly decried, and his whole system is placed on the condemned list. Brown was a *luxuriant genius*, and his medical eccentricities frequently exhibit somewhat of a marvellous, if not even a monstrous, appearance. We may, however, easily understand how it happens that this *soi-disant* system is now so fondly caressed and honoured with approbation, especially by young practitioners, before they can have treasured up a fund of original experience; as thus fortified, they approach the bed of the patient with a certain conscious air of veteran firmness. In the aphoristical doctrines of Bruno, they find every subject of this complicated art treated in a much easier, more concise, and convenient manner, than in the old-standing authorities of former ages: instead of studying, in well-arranged elementary treatises, the nature of every disease, according to its different stages, symptoms, &c. and making themselves acquainted with methods of cure adapted to the particular state of the disorder, as well as the peculiar constitution, temperament, and external conditions of the patient; they congratulate themselves that such diffuseness is *now* perfectly unnecessary, innumerable diseases being classed under one head, and treated in a similar manner, in this comprehensive mode of classification; for instance, in hæmoptysis, as well as in diarrhœa, hysterics, &c. &c. Dr. Brown indiscriminately recommends the use of chalybeates, [illegible]um, opium, and the like. This, surely, will be more readily understood in theory, and followed in practice, than the old elaborate or pedantic diffuseness, by which the study of medicine is rendered difficult to the tyro, and the practice of it puzzling, if not baffling, to the beginner.

NOSOLOGY;

OR,

THE CLASSIFICATION OF DISEASES.

MEDICINE has been juſtly defined the art of preventing, curing, and alleviating diſeaſes. While theſe, however, are in number almoſt infinite, each in its progreſs is alſo marked by almoſt endleſs varieties, from difference of climate, treatment, and many other particulars. Hence ariſe both the difficulty of diſtinguiſhing morbid affections from each other in actual practice, and the *diverſity of names* which have been given them in the writings of ancient phyſicians. It may readily be ſuppoſed, that in this as well as other ſubjects, there has been a gradual improvement from the progreſſive labours of induſtrious and ingenious men. And although much yet remains to be done in the proper arrangement and diſtinction of diſeaſes, or what has been called *methodical noſology*, yet there cannot be a doubt, that during the courſe of the preſent century this ſubject has received very great improvements. For theſe, we are in the firſt place highly indebted to the labours of Franciſcus Boiſſier de Sauvages, an eminent profeſſor of medicine at Montpelier, who, following out an idea ſuggeſted by the great Sydenham, firſt ſucceſsfully attempted to arrange diſeaſes, as botaniſts had done plants, into claſſes, orders, genera, and ſpecies. Since the publication of the *Noſologia Methodica* of Sauvages, this ſubject has been ſucceſsfully cultivated by ſeveral ingenious men, particularly by Sir Charles Linnæus of Upſal, to whoſe genius for arrangement every branch of natural hiſtory, but botany in particular, has been ſo highly indebted; by Rudolphus Auguſtus Vogel, an eminent profeſſor at Gottingen; and by John Baptiſt Sagar, a diſtinguiſhed phyſician at Inglaw in Moravia.

It may not be improper here briefly to enumerate the general claſſes to which each of them has referred the affections of the human body.

The classes of SAUVAGES *are,*

1. Vitia.
2. Febres.
3. Phlegmasiæ.
4. Spasmi.
5. Anhelationes.
6. Debilitates.
7. Dolores.
8. Vesaniæ.
9. Fluxus.
10. Cachexiæ.

The classes of LINNÆUS *are,*

1. Exanthematici.
2. Critici.
3. Phlogistici.
4. Dolorosi.
5. Mentales.
6. Quietales.
7. Motorii.
8. Suppressorii.
9. Evacuatorii.
10. Deformes.
11. Vitia.

The classes of VOGEL *are,*

1. Febres.
2. Profluvia.
3. Epischeses.
4. Dolores.
5. Spasmi.
6. Adynamiæ.
7. Hyperæheses.
8. Cachexiæ.
9. Paranoiæ.
10. Vitia.
11. Deformitates.

The classes of SAGAR *are.*

1. Vitia.
2. Plagæ.
3. Cachexiæ.
4. Dolores.
5. Fluxus.
6. Suppressiones.
7. Spasmi.
8. Anhelationes.
9. Debilitates.
10. Exanthemata.
11. Phlegmasiæ.
12. Febres.
13. Vesaniæ.

But of all the systems of arrangement yet presented to the medical world, the following, by the illustrious CULLEN, may justly be considered as the best. In treating, therefore, hereafter, of the diseases to which the human body is subject, we shall follow his plan, endeavouring to introduce also the best-established observations of others respecting the history, theory, and practice of each.

CLASS I. PYREXIÆ. A frequent pulse coming on after an horror; considerable heat; many of the functions injured; the strength of the limbs especially diminished.

ORDER I. Febres. Pyrexia without any primary local affection, following languor, lassitude, and other symptoms of debility.

Sect. I. *Intermittentes.* Fevers arising from the miasma of marshes; with an apyrexia, or at least a very evident remission; but the disease returns constantly, and for the most part with a horror or trembling. There is only one paroxysm in a day.

Genus I. Tertiana. Similar paroxyſms at an interval of about 48 hours, coming on moſt commonly at mid-day. A tertian hath either;

I. An apyrexia interpoſed;

1. Varying the duration of the paroxyſms.

A. The tertian whoſe paroxyſms are not extended beyond 12 hours.

B. The tertian with paroxyſms extended beyond 12 hours.

2. Varying in the return of the paroxyſms.

C. The tertian returning every day with unequal paroxyſms alternately ſimilar to one another.

D. The tertian returning every third day with two paroxyſms on the ſame day.

E. The tertian returning every day, with two paroxyſms on every third day, and only one on the intermediate ones.

F. The tertian returning every day, with a notable remiſſion interpoſed between the odd and the even days, but a leſs remarkable one between the even and the odd one.

3. Varying in its ſymptoms.

G. The tertian accompanied with a diſpoſition to ſleep.

H. Accompanied with ſpaſms and convulſive motions.

I. Accompanied with an efflorescence on the ſkin.

K. With phlegmaſia.

4. Varying in being complicated with other diſeaſes.

5. Varying as to its origin.

II. With the interpoſition only of a remiſſion between the paroxyſms.

Genus II. Quartana. Similar paroxyſms, with an interval of about 72 hours, coming on in the afternoon.

I. With the interpoſition of an apyrexia.

1. Varying in the type.

A. The quartan with ſingle paroxyſms, returning every fourth day, none on the other days.

B. With two paroxyſms every fourth day, and none on the other days.

C. With three paroxyſms every fourth day, and none on the intermediate days.

D. Of the four days having only the third free from fever, with ſimilar paroxyſms every fourth day.

E. The quartan coming on every day, with ſimilar paroxyſms every fourth day.

2. Varying in its ſymptoms.

3. Varying in being complicated with other diſeaſes.

II. With a remiſſion only between the paroxyſms.

Genus III. Quotidiana. Similar paroxyſms with an interval of about 24 hours, coming on in the morning.

I. With the interpoſition of an apyrexia.

1. Varies in being ſolitary.

A. Univerſal.

B. Partial.

2. Complicated with other diſeaſes.

II. With a remiſſion only between the paroxyſms.

Sect. II. *Continuæ.* Fevers without any intermiſſion, and not occaſioned by marſh miaſmata; attended with exacerbations and remiſſions, though not very remarkable.

Genus IV. Synocha. Great heat; a frequent, ſtrong, and hard pulſe; high-coloured urine; the functions of the ſenſorium a little diſturbed.

Genus V. Typhus. A contagious diſeaſe; the heat not greatly above the natural; the pulſe ſmall, weak, and for the moſt part frequent; the urine little changed; the functions of the ſenſorium very much diſturbed, and the ſtrength greatly diminiſhed.

The ſpecies are,

I. Typhus *petechialis*. Typhus for the moſt part with petechiæ.

Varying in degree. 1. Mild typhus. 2. Malignant typhus.

II. Typhus *icterodes*. Typhus with a yellowneſs of the ſkin.

Genus VI. Synochus. A contagious diſeaſe. A fever compoſed of a ſynocha and typhus; in the beginning a ſynocha, but towards the end a typhus.

Order II. Phlegmaſiæ. A ſynocha fever, with inflammation or topical pain, the internal function of the part being at the ſame time injured; the blood covered with ſize.

Genus VII. Phlogoſis. Pyrexia: redneſs, heat, and painful tenſion of ſome external part.

The ſpecies are,

I. Phlogoſis (*phlegmone*) of a vivid red colour; a ſwelling well defined, for the moſt part elevated to a point, and frequently degenerating into an abſceſs, with a beating or throbbing pain.

The variations are, 1. In the form. 2. In the ſituation.

II. Phlogoſis (*erythema*) of a reddiſh colour, vaniſhing upon preſſure; an unequal and creeping circumference, with ſcarce any ſwelling; ending in the ſcaling off of the cuticle, in phlyctenæ, or bliſters.

The variations are, 1. In the degree of violence. 2. In the remote cauſe. 3. In being complicated with other diſeaſes.

The conſequences of a phlogoſis are, an impoſthume, gangrene, ſphacelus.

Genus VIII. Ophthalmia. A redneſs and pain of the eye, with an inability to bear the light; for the moſt part with an effuſion of tears.

The ſpecies and varieties of the ophthalmia are,

I. Idiopathic,

1. Ophthalmia (*membranarum*) in the tunica adnata, and the membranes lying under it, or the coats of the eye.
   A. Varying in the degree of the external inflammation.
   B. In the internal coats affected.
2. Ophthalmia (*tarſi*) of the eye-lids, with ſwelling, eroſion, and glutinous exſudation.

II. Symptomatic.

1. From a diſeaſe of the eye itſelf.
2. From diſeaſes of other parts, or of the whole body.

Genus IX. Phrenitis. Violent pyrexia; pain of the head; redneſs of the face and eyes; inability to endure the light or any noiſe; watchfulneſs; a fierce delirium, or typhomania.

I. Idiopathic.

II. Symptomatic.

Genus X. Cynanche. Pyrexia ſometimes inclining to a typhus; difficulty of ſwallowing and breathing; with a ſenſation of narrowneſs in the fauces.

The ſpecies are,

I. Cynanche (*tonſillaris*) affecting the mucous membrane of the fauces, but eſpecially the tonſils, with redneſs and ſwelling, accompanied with a ſynocha.

II. Cynanche (*maligna*) affecting the tonſils and mucous membrane of the fauces with ſwelling, redneſs, and mucous cruſts of a whitiſh or aſh colour, creeping, and covering ulcers; with a typhus fever and exanthemata.

III. Cynanche (*trachealis*) attended with difficult reſpiration, noiſy and hoarſe inſpiration, loud cough, without any apparent tumour in the fauces, ſomewhat difficult deglutition, and a ſynocha.

IV. Cynanche (*pharingæa*) attended with redneſs in the bottom of the fauces, very difficult and painful deglutition, reſpiration ſufficiently free, and a ſynocha.

V. Cynanche (*parotidæa*) with great ſwelling of the parotids and maxillary glands appearing on the outſide: the reſpiration and deglutition but little injured; a ſynocha, for the moſt part mild.

Diſeaſes of this genus are ſymptomatic, either from external or internal cauſes.

Genus XI. Pneumonia. Pyrexia, with a pain in ſome part of the thorax, difficult reſpiration, and cough. The ſpecies are,

I. Peripneumony, with a pulſe not always hard, but ſometimes ſoft; an obtuſe pain of the breaſt; the reſpiration always difficult; ſometimes the patient cannot breathe unleſs in an upright poſture; the face ſwelled, and of a livid colour; the cough for the moſt part moiſt, frequently bloody.

1. Simple idiopathic peripneumonies.

Varying in degree.

2. Idiopathic peripneumonies complicated with fever.
3. Symptomatic peripneumonies.

II. Pleuriſy, with a hard pulſe; for the moſt part attended with a pungent pain of one ſide, augmented chiefly during the time of inſpiration; an uneaſineſs when lying on the ſide; a moſt painful cough, dry in the beginning of the diſeaſe, afterwards moiſt, and frequently bloody.

1. Simple idiopathic pleuriſies.
2. Pleuriſies, complicated. (1.) With fever. (2.) With catarrh.
3. Symptomatic pleuriſies.
4. Falſe pleuriſies.

The conſequences of pleuriſy are a vomica or empyema.

Genus XIII. Carditis. Pyrexia; pain about the heart; difficulty of breathing; cough; unequal pulſe; palpitation of the heart, and fainting.

I. Idiopathic.

II. Symptomatic.

Genus XIV. Peritonitis. Pyrexia; pain of the belly, exaſperated by an upright poſture, without the proper ſigns of other abdominal phlegmaſiæ. If the diagnoſtics of the following diſeaſes are given, they may be reckoned as ſo many ſpecies of this genus.

I. Peritonitis (*propria*) ſituate in the peritonæum, properly ſo called, ſurrounding the inſide of the abdomen.

II. Peritonitis (*omentalis*) in the peritonæum extended through the omentum.

III. Peritonitis (*meſenterica*) in the peritonæum ſpread through the meſentery.

Genus XV. Gaſtritis. Pyrexia inclining to a typhus; anxiety; pain and heat of the epigaſtrium, augmented when any thing is taken into the ſtomach; an inclination to vomit, and an immediate rejection of every thing ſwallowed; an hickup.

I. Idiopathic.

1. From internal cauſes.

A. Gaſtritis (*phlegmonodæa*) attended with acute pain and violent pyrexia.

2. From external cauſes.

B. Gaſtritis (*eryſipelatoſa*), with a leſs violent fever and pain; an eryſipelatous redneſs appearing on the fauces.

II. Symptomatic.

Genus XVI. Enteritis. Pyrexia of a typhous nature; pungent pain of the belly, ſtretching and twiſting round the navel; vomiting; the belly obſtinately bound.

I. Idiopathic.

1. Enteritis (*phlegmonodæa*), with acute pain, violent fever, vomiting, and conſtipation of the belly.
2. Enteritis (*eryſipelatoſa*), with leſs acute fever and pain, without vomiting; but accompanied with a diarrhœa.

II. Symptomatic.

Genus XVII. Hepatitis. Pyrexia; tenſion and pain of the right hypochondrium; ſometimes pungent like that of a pleuriſy, but more frequently obtuſe; a pain reaching to the clavicle and top of the right ſhoulder; a difficulty of lying on the left ſide; dyſpnœa; dry cough, vomiting and hickup.

Genus XVIII. Splenitis. Pyrexia; tenſion, heat, and ſwelling of the left hypochondrium, the pain increaſing by preſſure; without the ſigns of nephritis.

Genus XIX. Nephritis. Pyrexia; pain in the region of the kidney, often following the courſe of the ureter; frequent making of water, either thin and colourleſs, or very red; vomiting; ſtupor of the thigh; with a retraction or pain of the teſticle of the ſame ſide. The ſpecies are,

I. Idiopathic. Spontaneous.

II. Symptomatic.

Genus XX. Cyſtitis. Pyrexia; pain and ſwelling of the hypogaſtrium; frequent and painful making of water, or iſchuria; and teneſmus. The ſpecies are,

I. Thoſe ariſing from internal cauſes.

II. Thoſe from external cauſes.

Genus XXI. Hyſteritis. Pyrexia; heat, tenſion, ſwelling, and pain of the hypogaſtrium; the os uteri painful when touched; vomiting.

Genus XXII. Rheumatiſmus. A diſeaſe ariſing from an external and frequently very evident cauſe; pyrexia; pain about the joints, frequently purſuing the courſe of the muſcles; infeſting the knees and other large joints rather than thoſe of the feet or hands; increaſed by external heat.

The ſpecies are either idiopathic or ſymptomatic. The former varies in ſituation.

A. In the muſcles of the loins.

B. In the muſcles of the coxendix.

C. In the muſcles of the breaſt.

Genus XXIII. Odontalgia; a rheumatiſm of the jaws from a caries of the teeth.

Genus XXIV. Podagra. An hereditary diſeaſe, ariſing without any evident external cauſe, but for the moſt part preceded by an unuſual affection of the ſtomach; pyrexia; pain of a joint for the moſt part of the great toe of the foot, at leaſt infeſting chiefly the wriſts and ankles; returning by intervals; and often alternated with affections of the ſtomach and other internal parts.

I. Podagra (*regularis*), with a pretty violent inflammation of the joints remaining for ſome days, and by degrees going off with ſwelling, itching, and deſquamation of the affected part.

II. Podagra (*atonica*), with an atony of the ſtomach or ſome other internal part; and either without the uſual inflammation of the joints, or only with ſlight and wandering pains; and frequently alternated with dyſpepſia, or other ſymptoms of atony.

III. Podagra (*retrograda*), with the inflammation of the joints ſuddenly receding, and an atony of the ſtomach and other parts immediately following.

IV. Podagra (*aberrans*), with the inflammation of an internal part either preceding or not, and ſuddenly receding; with an inflammation of the joints.

Genus XXV. Arthropuoſis. Deep, obtuſe, and long-continued pains of the joints or muſcular parts, frequently following contuſions, with either no ſwelling, or a moderate and diffuſed one; no phlogoſis; pyrexia, at firſt gentle, afterwards hectic, and at length an impoſthume.

Order III. Exanthemata. Contagious diſeaſes; affecting a perſon only once in his life; beginning with fever; after a certain time appear phlogoſis, for the moſt part ſmall and in conſiderable number, and diſperſed over the ſkin.

Genus XXVI. Eryſipelas. A ſynocha of two or three days, for the moſt part attended with drowſineſs, often with a delirium. In ſome part of the ſkin, moſt frequently the face, appears a phlogoſis *erythema*. (G. VII. Sp. 2.) The ſpecies are,

I. Eryſipelas (*veſiculoſum*), with erythema, redneſs creeping, occupying a large ſpace, and in ſome parts ending in large bliſters.

II. Eryſipelas (*phlyctenodes*), with an erythema formed of a number of papulæ, chiefly occupying the trunk of the body, ending in phlyctenæ or ſmall bliſters.

The diſeaſe is alſo ſymptomatic.

Genus XXVII. Peſtis. An exceedingly contagious typhus, with the higheſt debility. On an uncertain day of the

diſeaſe buboes and carbuncles break forth. It is various in degree, but the ſpecies are uncertain.

Genus XXVIII. Variola; a contagious ſynocha, with vomiting, and pain on preſſing the epigaſtrium. On the third day begins, and on the fifth is finiſhed, the eruption of inflammatory puſtules, which ſuppurate in the ſpace of eight days, and at laſt go off in cruſts, frequently leaving depreſſed cicatrices or pockpits in the ſkin. The ſpecies are,

I. Variola (*diſcreta*), with few, diſtinct, turgid puſtules, having circular baſes; the fever ceaſing immediately after the eruption.

II. Variola (*confluens*), with numerous, confluent, irregularly ſhaped puſtules, flaccid, and little elevated; the fever remaining after the eruption.

Genus XXIX. Varicella. Synocha; papulæ breaking out after a ſhort fever, ſimilar to thoſe of the ſmall-pox, but hardly ever coming to ſuppuration; after a few days going off in ſmall ſcales, but never leaving any mark.

Genus XXX. Rubeola. A contagious ſynocha, with ſneezing, epiphora, and dry hoarſe cough. On the fourth day, or a little later, break forth ſmall, cluſtered, and ſcarce elevated papulæ; after three days going off in very ſmall branny ſcales.

I. Rubeola (*vulgaris*), with very ſmall confluent, corymboſe papulæ, ſcarce riſing above the ſkin.

Varying,

1. In the ſymptoms being more ſevere, and the courſe of the diſeaſe leſs regular.
2. In being accompanied with a quinſey.
3. With a putrid diatheſis.

II. Rubeola (*variolodes*), with diſtinct papulæ, raiſed above the ſkin.

Genus XXXI. Miliaria. Synochus with anxiety, frequent ſighing, fœtid ſweat, and points on the ſkin. On an uncertain day of the diſeaſe break out red, ſmall, diſtinct papulæ, ſpread over the whole body as well as the face; the apices of which, after one or two days, become very ſmall white puſtules, remaining for a ſhort time.

Genus XXXII. Scarlatina. A contagious ſynocha. On the fourth day of the diſeaſe the face ſwells a little; at the ſame time an univerſal redneſs occupies the ſkin in large ſpots, at length running together; after three days going off in branny ſcales; frequently ſucceeded by an anaſarca. The ſpecies are,

I. Scarlatina (*ſimplex*), not accompanied with cynanche.

II. Scarlatina (*cynanchica*), with an ulcerous cynanche.

Genus XXXIII. Urticaria. An amphemerina fever. On the ſecond day of the diſeaſe red ſpots reſembling the ſtinging of nettles, almoſt vaniſhing during the day, but returning in the evening with the fever, and after a few days going off altogether in very ſmall ſcales.

Genus XXXIV. Pemphigus. A contagious typhus. On the firſt, ſecond, or third day of the diſeaſe, bliſters break out in ſeveral parts of the body, of the bigneſs of a bean, remaining for many days, and at laſt pouring out a thin ichor.

Genus XXXV. Aphtha. Synochus; the tongue ſomewhat ſwelled and of a livid colour, as well as the fauces; eſchars firſt appearing in the fauces, but at length occupying the whole internal part of the mouth, of a white colour, ſometimes diſtinct, often running together; quickly growing again when taken off, and remaining for an uncertain time.

The ſpecies are, 1. Idiopathic. 2. Symptomatic.

Order IV. Hæmorrhagiæ. Pyrexia, with a profuſion of blood, without any external violence: the blood drawn from a vein hath the ſame appearance as in phlegmaſiæ.

Genus XXXVI. Epiſtaxis. Pain or weight of the head, redneſs of the face; a profuſion of blood from the noſe.

I. Idiopathic.

Varying according to the time of life.

1. Epiſtaxis of young people, with ſymptoms of an arterious plethora.
2. Epiſtaxis of old people, with ſymptoms of a venous plethora.

II. Symptomatic.

1. From internal cauſes.
2. From external cauſes.

Genus XXXVII. Hæmoptyſis. Redneſs of the cheeks; a ſenſation of uneaſineſs, or pain, and ſometimes of heat in the breaſt; difficulty of breathing; tickling of the fauces; either a ſevere or leſs violent cough, bringing up florid and frequently frothy blood.

The idiopathic ſpecies are,

1. Hæmoptyſis (*plethorica*), without any external violence, and without being preceded by any cough or ſuppreſſion of any cuſtomary evacuation.
2. Hæmoptyſis (*violenta*), from external violence applied.
3. Hæmoptyſis (*phthiſica*), after a long continued cough, with a leanneſs and debility.
4. Hæmoptyſis (*calculoſa*), in which ſome calculous molecules, for the moſt part of a calcareous nature, are thrown up.

5. Hæmoptyſis (*vicaria*), after the ſuppreſſion of a cuſtomary evacuation.

Beſides theſe, there are a number of ſymptomatic ſpecies mentioned by different authors. The conſequence of an hæmoptyſis is, a

Phthiſis. A waſting and debility of the body, with a cough, hectic fever, and for the moſt part a purulent expectoration. The ſpecies are,

I. An incipient phthiſis, without any expectoration of pus.

II. A confirmed phthiſis, with an expectoration of pus.

Both ſpecies vary, 1. As to their remote cauſe. 2. As to the origin of the purulent matter.

Genus XXXVIII. Hæmorrhois. Weight and pain of the head; vertigo; pain of the loins; pain of the anus; livid painful tubercles, from which for the moſt part blood flows out; which ſometimes alſo drops out of the anus, without any apparent tumor.

1. Hæmorrhois (*tumens*), external from mariſcæ.

Varying.

A. Bloody.

B. Mucous.

2. Hæmorrhois (*procidens*), external from a *procidentia ani.*

3. Hæmorrhois (*fluens*), internal, without any ſwelling, or *procidentia ani.*

4. Hæmorrhois (*cæca*), with pain and ſwelling of the anus, without any profuſion of blood.

Genus XXXIX. Menorrhagia. Pains of the back, belly, and loins, like thoſe of child-birth; an unuſually copious flux of the menſes or blood from the vagina. The ſpecies are,

1. Menorrhagia (*rubra*), bloody in women neither with child nor in child-birth.

2. Menorrhagia (*abortus*), bloody in women with child.

3. Menorrhagia (*lochialis*), bloody in women after delivery.

4. Menorrhagia (*vitiorum*), bloody from ſome local diſeaſe.

5. Menorrhagia (*alba*), ſerous, without any local diſeaſe, in women not with child.

6. Menorrhagia (*Nabothi*), ſerous in women with child.

Order V. Profluvia. Pyrexia, with an increaſed ſecretion, naturally not bloody.

Genus XL. Catarrhus. Pyrexia frequently contagious; an increaſed excretion of mucus, at leaſt efforts to excrete it.

The ſpecies are for the moſt part ſymptomatic.

1. From cold.

2. From contagion.

Genus XLI. Dyſenteria. Contagious pyrexia; frequent mucous or bloody ſtools, while the alvine fæces are for the moſt part retained; gripes; teneſmus.

Varying:

1. Accompanied with worms.
2. With the excretion of ſmall fleſhy or ſebaceous bodies.
3. With an intermittent fever.
4. Without blood.
5. With miliary fever.

CLASS II. Neuroses. An injury of the ſenſe and motion, without an idiopathic pyrexia or any local affection.

Order I. Comata. A diminution of voluntary motion, with ſleep, or a deprivation of the ſenſes.

Genus XLII. Apoplexia. Almoſt all voluntary motion diminiſhed, with ſleep more or leſs profound; the motion of the heart and arteries remaining.

The idiopathic ſpecies are,

1. Apoplexia (*ſanguinea*), with ſymptoms of univerſal plethora, eſpecially of the head.
2. Apoplexia (*ſeroſa*), with a leucophlegmatia over the whole body, eſpecially in old people.
3. Apoplexia (*hydrocephalica*), coming on by degrees; affecting infants, or thoſe below the age of puberty, firſt with laſſitude, a ſlight fever and pain of the head, then with ſlowneſs of the pulſe, dilatation of the pupil of the eye, and drowſineſs.
4. Apoplexia (*atrabiliaria*), taking place in thoſe of a melancholy conſtitution.
5. Apoplexia (*traumatica*), from ſome external injury mechanically applied to the head.
6. Apoplexia (*venenata*), from powerful ſedatives taken internally or applied externally.
7. Apoplexia (*mentalis*), from a paſſion of the mind.
8. Apoplexia (*cataleptica*), the muſcles remaining contractile, by external motion of the limbs.
9. Apoplexia (*ſuffocata*), from ſome external ſuffocating power.

The apoplexia is frequently ſymptomatic,

1. Of an intermittent fever. 2. Continued fever. 3. Phlegmaſia. 4. Exanthema. 5. Hyſteria. 6. Epilepſy. 7. Podagra. 8. Worms. 9. Iſchuria. 10. Scurvy.

Genus XLIII. Paralyſis. Only ſome of the voluntary motions diminiſhed, frequently with ſleep.

The idiopathic ſpecies are,

1. Paralyſis (*partialis*), of ſome particular muſcles only.
2. Paralyſis (*hemiplegica*), of one ſide of the body.

Varying according to the conſtitution of the body.

a. Hemiplegia in a plethoric habit.
b. In a leucophlegmatic habit.

3. Paralyſis (*paraplegica*), of one half the body taken tranſverſely.
4. Paralyſis (*venenata*), from ſedative powers applied either internally or externally.

A ſymptom either of an Aſthenia or Palſy is,

Tremor; an alternate motion of a limb by frequent ſtrokes and intervals.

The ſpecies are, 1. Aſthenic. 2. Paralytic. 3. Convulſive.

ORDER II. Adynamiæ. A diminution of the involuntary motions, whether vital or natural.

Genus XLIV. Syncope; a diminution, or even a total ſtoppage, of the motion of the heart for a little while.

I. Idiopathic.

1. Syncope (*cardiaca*), returning frequently without any manifeſt cauſe, with violent palpitations of the heart during the intervals.—From a fault of the heart or neighbouring veſſels.
2. Syncope (*occaſionalis*), ariſing from ſome evident cauſe.—From an affection of the whole ſyſtem.

II. Symptomatic; or ſymptoms of diſeaſes either of the whole ſyſtem, or of other parts beſides the heart.

Genus XLV. Dyſpepſia. Anorexia, nauſea, vomiting, inflation, belching, rumination, cardialgia, gaſtrodynia, more or fewer of thoſe ſymptoms at leaſt concurring; for the moſt part with a conſtipation of the belly, and without any other diſeaſe either of the ſtomach itſelf or of other parts.

I. Idiopathic.

II. Symptomatic.

1. From a diſeaſe of the ſtomach itſelf.
2. From a diſeaſe of other parts, or of the whole body.

Genus XLVI. Hypochondriaſis. Dyſpepſia, with languor, ſadneſs, and fear, without any adequate cauſes, in a melancholy temperament.

Genus XLVII. Chloroſis. Dyſpepſia, or a deſire of ſomething not uſed as food; a pale or diſcoloured complexion; the veins not well filled; a ſoft tumor of the whole body; aſthenia; palpitation; ſuppreſſion of the menſes.

Order III. Spaſmi. Irregular motions of the muſcles or muſcular fibres.

Sect. I. *In the animal functions.*

Genus XLVIII. Tetanus; a ſpaſtic rigidity of almoſt the whole body.

Varying according to the remote cauſe, as it ariſes either from ſomething internal, from cold, or from a wound. It varies likewiſe, from whatever cauſe it may ariſe, according to the part of the body affected.

Genus XLIX. Triſmus. A ſpaſtic rigidity of the lower jaw.—The ſpecies are,

1. Triſmus (*naſcentium*), ſeizing infants under two months old.
2. Triſmus (*traumaticus*), ſeizing people of all ages either from a wound or cold.

Genus L. Convulſio.—An irregular clonic contraction of the muſcles without ſleep.

I. Idiopathic.

II. Symptomatic.

Genus LI. Chorea, attacking thoſe who have not yet arrived at puberty, moſt commonly within the 10th or 14th year, with convulſive motions for the moſt part of one ſide in attempting the voluntary motion of the hands and arms, reſembling the geſticulations of mountebanks; in walking, rather dragging one of their feet after them than lifting it.

Genus LII. Raphania. A ſpaſtic contraction of the joints, with a convulſive agitation, and moſt violent periodical pain.

Genus LIII. Epilepſia. A convulſion of the muſcles, with ſleep. The idiopathic ſpecies are,

1. Epilepſia (*cerebralis*), ſuddenly attacking without any manifeſt cauſe, without any ſenſe of uneaſineſs preceding, excepting perhaps a ſlight vertigo or ſcotomia.
2. Epilepſia (*ſympathica*), without any manifeſt cauſe, but preceded by the ſenſation of a kind of air ariſing from a certain part of the body towards the head.
3. Epilepſia (*occaſionalis*), ariſing from a manifeſt irritation, and ceaſing on the removal of that irritation.

Varying according to the difference of the irritating matter. And thus it may ariſe,

From injuries of the head; pain; worms; poiſon; from the repulſion of the itch; or an effuſion of any other acrid humour; from crudities in the ſtomach; from paſſions of the mind; from an immoderate hemorrhagy; or from debility.

Sect. II. *In the vital functions.*

In the action of the heart.

Genus LIV. Palpitatio. A violent and irregular motion of the heart.

In the action of the lungs.

Genus LV. Aſthma. A difficulty of breathing returning by intervals, with a ſenſe of ſtraightneſs in the breaſt, and a noiſy reſpiration with hiſſing. In the beginning of the paroxyſm there is either no cough at all, or coughing is difficult; but towards the end the cough becomes free, frequently with a copious ſpitting of mucus.—The idiopathic ſpecies are,

1. Aſthma (*ſpontaneum*), without any manifeſt cauſe or other concomitant diſeaſe.
2. Aſthma (*exanthematicum*), from the repulſion of the itch or other acrid effuſion.
3. Aſthma (*plethoricum*), from the ſuppreſſion of ſome cuſtomary ſanguineous evacuation, or from a ſpontaneous plethora.

Genus LVI. Dyſpnœa. A continual difficulty of breathing, without any ſenſe of ſtraightneſs, but rather of fullneſs and infarction in the breaſt; a frequent cough throughout the whole courſe of the diſeaſe.

The idiopathic ſpecies are,

1. Dyſpnœa (*catarrhalis*), with a frequent cough, bringing up plenty of viſcid mucus.
2. Dyſpnœa (*ſicca*), with a cough for the moſt part dry.
3. Dyſpnœa (*aërea*), increaſed by the leaſt change of weather.
4. Dyſpnœa (*terrea*), bringing up with the cough an earthy calculous matter.
5. Dyſpnœa (*aquoſa*), with ſcanty urine and œdematous feet; without any fluctuation in the breaſt, or other ſigns of an hydrothorax.
6. Dyſpnœa (*pinguedinoſa*), in very fat people.
7. Dyſpnœa (*thoracica*), from an injury done to the parts ſurrounding the thorax, or from ſome bad conformation of them.
8. Dyſpnœa (*extrinſeca*), from evident external cauſes.

The ſymptomatic ſpecies of dyſpnœa are ſymptoms

1. Of diſeaſes of the heart or large veſſels.
2. Of a ſwelling in the abdomen.
3. Of various diſeaſes.

Genus LVII. Pertuſſis. A contagious diſeaſe; convulſive ſtrangulating cough reiterated with noiſy inſpiration; frequent vomiting.

Sect. III. *In the natural functions.*

Genus LVIII. Pyrosis. A burning pain in the epigastrium, with plenty of aqueous humour, for the most part insipid, but sometimes acrid, belched up.

Genus LIX. Colica. Pain of the belly, especially twisting round the navel; vomiting; a constipation.

The idiopathic species are,

1. Colica (*spasmodica*), with retraction of the navel, and spasms of the abdominal muscles.

Varying, by reason of some symptoms superadded. Hence,

a, Colica, with vomiting of excrements, or of matters injected by the anus.

b, Colica, with inflammation supervening.

2. Colica (*pictonum*), preceded by a sense of weight or uneasiness in the belly, especially about the navel; then comes on the colic pain, at first slight and interrupted, chiefly augmented after meals: at length more severe and almost continual, with pains of the arms and back, at last ending in a palsy.

Varying according to the nature of the remote cause; and hence,

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a, From metallic poison.

b, From acids taken inwardly.

c, From cold.

d, From a contusion of the back.

3. Colica (*stercorea*), in people subject to costiveness.

4. Colica (*accidentalis*), from acrid matter taken inwardly.

5. Colica (*meconialis*), in new-born children, from a retention of the meconium.

6. Colica (*calculosa*), with a sensation of stricture in some part of the intestines, and frequently of a collection of flatus with some pain before the constricted part; which flatus also passing through the part where the stricture is felt, gradually vanishes; the belly flow, and at last passing only a few liquid fæces.

7. Colica (*calculosa*), with a fixed hardness in some part of the abdomen, and calculi sometimes passing by the anus.

Genus LX. Cholera. A vomiting of bilious matter, and likewise a frequent excretion of the same by stool; anxiety; gripes; spasms in the calves of the legs.

I. Idiopathic.

1. Cholera (*spontanea*), arising in a warm season, without any manifest cause.

2. Cholera (*accidentalis*), from acrid matters taken inwardly.

II. Symptomatic.

Genus LXI. Diarrhœa. Frequent ſtools; the diſeaſe not infectious; no primary pyrexia.

I. Idiopathic.

1. Diarrhœa (*crapuloſa*), in which the excrements are voided in greater quantity than naturally.
2. Diarrhœa (*biliosa*), in which yellow fæces are voided in great quantity.
3. Diarrhœa (*mucoſa*), in which either from acrid ſubſtances taken inwardly, or from cold, eſpecially applied to the feet, a great quantity of mucus is voided.
4. Diarrhœa (*cœliaca*), in which a milky humour of the nature of chyle is paſſed.
5. Diarrhœa (*lienteria*), in which the aliments are diſcharged with little alteration ſoon after eating.
6. Diarrhœa (*hepatirrhœa*), in which a bloody ſerous matter is diſcharged without pain.

II. Symptomatic.

Genus LXII. Diabetes. A chronical profuſion of urine, for the moſt part preternatural, and in immoderate quantity.

I. Idiopathic.

1. Diabetes (*mellitus*), with urine of the ſmell, colour, and taſte of honey.
2. Diabetes (*inſipidus*), with limpid, but not ſweet urine.

II. Symptomatic.

Genus LXIII. Hyſteria. Rumbling of the bowels; a ſenſation as of a globe turning itſelf in the belly, aſcending to the ſtomach and fauces, and there threatening ſuffocation; ſleep; convulſions; a great quantity of limpid urine; the mind involuntarily fickle and mutable.

The following are by Sauvages reckoned diſtinct idiopathic ſpecies; but, by Dr. Cullen, only varieties of the ſame ſpecies.

A, From a retention of the menſes.
B, From a menorrhagia cruenta.
C, From a menorrhagia ſeroſa, or fluor albus.
D, From an obſtruction of the viſcera.
E, From a fault of the ſtomach.
F, From too great ſalacity.

Genus LXIV. Hydrophobia. A diſlike and horror at any kind of drink, as occaſioning a convulſion of the pharynx; induced, for the moſt part, by the bite of a mad animal. The ſpecies are,

I. Hydrophobia (*rabioſa*), with a deſire of biting the by-ſtanders, occaſioned by the bite of a mad animal.

II. Hydrophobia (*ſimplex*), without madneſs, or any deſire of biting.

ORDER IV. Veſaniæ. Diſorders of the judgment, without any pyrexia or coma.

Genus LXV. Amentia; an imbecility of judgment, by which people either do not perceive, or do not remember, the relations of things. The ſpecies are,

I. Amentia (*congenita*), continuing from a perſon's birth.

II. Amentia (*ſenilis*), from the diminution of the perceptions and memory through extreme old age.

III. Amentia (*acquiſita*), occurring in people formerly of a ſound mind, from evident external cauſes.

Genus LXVI. Melancholia; a partial madneſs, without dyſpepſia.

Varying according to the different ſubjects concerning which the perſon raves; and thus it is,

1. With an imagination in the patient concerning his body being in a dangerous condition, from ſlight cauſes; or that his affairs are in a deſperate ſtate.
2. With an imagination concerning a proſperous ſtate of affairs.
3. With violent love, without ſatyriaſis or nymphomania.
4. With a ſuperſtitious fear of a future ſtate.
5. With an averſion from motion and all the offices of life.
6. With reſtleſſneſs, and an impatience of any ſituation whatever.
7. With a wearineſs of life.
8. With a deception concerning the nature of the patient's ſpecies.

Dr. Cullen thinks that there is no ſuch diſeaſe as that called *dæmonomania*, and that the diſeaſes mentioned by Sauvages under that title are either,

1. Species of melancholy or mania; or
2. Of ſome diſeaſe by the ſpectators falſely aſcribed to the influence of an evil ſpirit; or
3. Of a diſeaſe entirely feigned; or,
4. Of a diſeaſe partly true and partly feigned.

Genus LXVII. Mania; univerſal madneſs.

1. Mania (*mentalis*), ariſing entirely from paſſions of the mind.
2. Mania (*corporea*), from an evident diſeaſe of the body.

Varying according to the different diſeaſe of the body.

3. Mania (*obſcura*), without any paſſion of the mind or evident diſeaſe of the body preceding.

The ſymptomatic ſpecies of mania are,

1. Paraphroſyne from poiſons.
2. Paraphroſyne from paſſion.
3. Paraphroſyne febrilis.

Genus LXVIII. Oneirodynia. A violent and troublesome imagination in time of sleep.

1. Oneirodynia (*activa*), exciting to walking and various motions.
2. Oneirodynia (*gravans*) from a sense of some weight incumbent, and pressing on the breast especially.

CLASS III. CACHEXIÆ; a depraved habit of the whole or greatest part of the body, without primary pyrexia or neurosis.

ORDER I. Marcores. A wasting of the whole body.

Genus LXIX. Tabes. Leanness, asthenia, hectic pyrexia. The species are,

1. Tabes (*purulenta*), from an external or internal ulcer, or from a vomica.

Varying in its situation: hence,

2. Tabes (*scrophulosa*), in scrophulous constitutions.
3. Tabes (*venenata*), from poison taken inwardly.

Genus LXX. Atrophia. Leanness and asthenia, without hectic pyrexia.

The species are,

1. Atrophia (*inanitorum*), from too great evacuation.
2. Atrophia (*famelicorum*), from a deficiency of nourishment.
3. Atrophia (*cacochymica*), from corrupted nourishment.
4. Atrophia (*debilium*), from the function of nutrition being depraved, without any extraordinary evacuation or cacochymia having preceded.

ORDER II. Intumescentiæ. An external tumor of the whole or greatest part of the body.

Sect. I. *Adiposæ*.

Genus LXXI. Polysarcia; a troublesome swelling of the body from fat.

Sect. II. *Flatuosæ*.

Genus LXXII. Pneumatosis. A tense elastic swelling of the body, crackling under the hand. The species are,

1. Pneumatosis (*spontanea*), without any manifest cause.
2. Pneumatosis (*traumatica*), from a wound in the breast.
3. Pneumatosis (*venenata*), from poison injected or applied.
4. Pneumatosis (*hysterica*), with hysteria.

Genus LXXIII. Tympanites. A tense, elastic, sonorous swelling of the abdomen; costiveness; a decay of the other parts. The species are,

1. Tympanites (*inteſtinalis*), with a tumor of the abdomen frequently unequal, and with a frequent evacuation of air, relieving the tenſion and pain.
2. Tympanites (*abdominalis*), with a more evident noiſe, a more equable tumor, and a leſs frequent emiſſion of flatus, which alſo gives leſs relief.

Genus LXXIV. Phyſometra. A ſlight elaſtic ſwelling in the epigaſtrium, having the figure and ſituation of the uterus.

Sect. III. *Aquoſæ* or *Hydropes*.

Genus LXXV. Anaſarca. A ſoft, inelaſtic ſwelling of the whole body, or ſome part of it. The ſpecies are,

1. Anaſarca (*ſeroſa*), from a retention of ſerum on account of the ſuppreſſion of the uſual evacuations, or from an increaſe of the ſerum on account of too great a quantity of water taken inwardly.
2. Anaſarca (*oppilata*), from a compreſſion of the veins.
3. Anaſarca (*exanthematica*), ariſing after exanthemata, eſpecially after the eryſipelas.
4. Anaſarca (*anæmia*), from the thinneſs of the blood produced by hemorrhagy.
5. Anaſarca (*debilium*), in weak people after long diſeaſes, or from other cauſes.

Genus LXXVI. Hydrocephalus. A ſoft inelaſtic ſwelling of the head, with the ſutures of the cranium opened.

Genus LXXVII. Hydrorachitis. A ſoft ſlender tumor above the vertebræ of the loins; the vertebræ gaping from each other.

Genus LXXVIII. Hydrothorax. Dyſpnœa; paleneſs of the face; œdematous ſwellings of the feet; ſcanty urine; lying down difficult; a ſudden and ſpontaneous waking out of ſleep, with palpitation; water fluctuating in the breaſt.

Genus LXXIX. Aſcites. A tenſe, ſcarce elaſtic, but fluctuating ſwelling of the abdomen. The ſpecies are,

1. Aſcites (*abdominalis*), with an equal ſwelling of the whole abdomen, and with a fluctuation ſufficiently evident.

Varying according to the cauſe.

A, From an obſtruction of the viſcera.
B, From debility.
C, From a thinneſs of the blood.

2. Aſcites (*ſaccatus*), with a ſwelling of the abdomen, in the beginning at leaſt, partial, and with a leſs evident fluctuation.

Genus LXXX. Hydrometra. A ſwelling of the hypogaſtrium in women, gradually increaſing, keeping the ſhape of the

uterus, yielding to preſſure, and fluctuating; without iſchuria or pregnancy.

Genus LXXXI. Hydrocele. A ſwelling of the ſcrotum, not painful; increaſing by degrees, ſoft, fluctuating, and pellucid.

Sect. IV. *Solidæ.*

Genus LXXXII. Phyſconia. A ſwelling chiefly occupying a certain part of the abdomen, gradually increaſing, and neither ſonorous nor fluctuating. The ſpecies are,

Phyſconia hepatica.
Phyſconia ſplenica.
Phyſconia renalis.
Phyſconia uterina.
Phyſconia ab ovario.
Phyſconia meſenterica.
Phyſconia inteſtinalis.
Phyſconia omentalis.
Phyſconia polyſplachna.
Phyſconia viſceralis.
Phyſconia externa lupialis.
Phyſconia externa ſcirrhodea.
Phyſconia externa hydatidoſa.
Phyſconia ab adipe ſubcutaneo.
Phyſconia ab excreſcentia.

Genus LXXXIII. Rachitis. A large head, ſwelling moſt in the forepart, the ribs depreſſed; abdomen ſwelled, with a decay of the other parts.

Varying,

1. Simple, without any other diſeaſe.
2. Joined with other diſeaſes.

Order III. Impetigines. Cachexies chiefly deforming the ſkin and external parts of the body.

Genus LXXXIV. Scrophula. Swellings of the conglobate glands, eſpecially in the neck; ſwelling of the upper lip and ſupport of the noſe; the face florid, ſkin thin, abdomen ſwelled. The ſpecies are,

1. Scrophula (*vulgaris*), ſimple, external, and permanent.
2. Scrophula (*meſenterica*), ſimple, internal, with paleneſs of the face, want of appetite, ſwelling of the abdomen, and unuſal fetor of the excrements.
3. Scrophula (*fugax*), moſt ſimple, appearing only about the neck; for the moſt part proceeding from the reſorption of the matter of ulcers in the head.
4. Scrophula (*Americana*), joined with the yaws.

Genus LXXXV. Syphilis. A contagious diſeaſe, after impure

venery, and a diſorder of the genitals; ulcers of the tonſils; of the ſkin, eſpecially about the margin of the hair; corymboſe papulæ, ending in cruſts and cruſty ulcers; pains of the bones; exoſtoſes.

Genus LXXXVI. Scorbutus. In cold countries, attacking after putreſcent diet, eſpecially ſuch as is ſalt and of the animal kind, where no ſupply of freſh vegetables is to be had; aſthenia; ſtomacace; ſpots of different colours on the ſkin, for the moſt part livid, and appearing chiefly among the roots of the hair.

Varying in degree.

a, Scorbutus incipiens.
b, Scorbutus creſcens.
c, Scorbutus inveteratus.

Varying alſo in ſymptoms.

d, Scorbutus lividus.
e, Scorbutus petechialis.
f, Scorbutus pallidus.
g, Scorbutus ruber.
h, Scorbutus calidus.

Genus LXXXVII. Elephantiaſis. A contagious diſeaſe; thick, wrinkled, rough, unctuous ſkin, deſtitute of hairs, anæſtheſia in the extremities, the face deformed with pimples, the voice hoarſe and naſal.

Genus LXXXVIII. Lepra. The ſkin rough, with white, branny, and chopped eſchars, ſometimes moiſt beneath, with itching.

Genus LXXXIX. Framboeſia. Swellings reſembling fungi, or the fruit of the mulberry or raſpberry, growing on various parts of the ſkin.

Genus XC. Trichoma. A contagious diſeaſe; the hairs thicker than uſual, and twiſted into inextricable knots and cords.

Genus XCI. Icterus. Yellowneſs of the ſkin and eyes; white fæces; urine of a dark red, tinging what is put into it of a clay-colour.

The idiopathic ſpecies are,

1. Icterus (*calculoſus*), with acute pain in the epigaſtric region, increaſing after meals; biliary concretions voided by ſtool.
2. Icterus (*ſpaſmodicus*), without pain, after ſpaſmodic diſeaſes and paſſions of the mind.
3. Icterus (*hepaticus*), without pain, after diſeaſes of the liver.
4. Icterus (*gravidarum*), ariſing during the time of pregnancy, and going off after delivery.

5. Icterus (*infantum*), coming on in infants a few days after birth.

CLASS IV. Locales. An affection of some part, but not of the whole body.

Order I. Dyſetheſiæ. The ſenſes depraved or deſtroyed, from a diſeaſe of the external organs.

Genus XCII. Caligo. The ſight impaired or totally deſtroyed, on account of ſome opaque ſubſtance interpoſed between the objects and the retina, inherent in the eye itſelf or the eye-lids. The ſpecies are,

1. Caligo (*lentis*), occaſioned by an opaque ſpot behind the pupil.
2. Caligo (*corneæ*), from an opacity of the cornea.
3. Caligo (*pupillæ*), from an obſtruction of the pupil.

Varying according to the different cauſes from which it proceeds.

4. Caligo (*humorum*), from a diſeaſe or defect of the aqueous humour.

Varying according to the different ſtates of the humour.

5. Caligo (*palpebrarum*), from a diſeaſe inherent in the eye-lids.

Varying according to the nature of the diſeaſe in the eye-lids.

Genus XCIII. Amauroſis. The ſight diminiſhed, or totally aboliſhed, without any evident diſeaſe of the eye; the pupil for the moſt part remaining dilated and immoveable. The ſpecies are,

1. Amauroſis (*compreſſionis*), after the cauſes and attended with ſymptoms of congeſtion in the brain.

Varying according to the nature of the remote cauſe.

2. Amauroſis (*atonica*), after the cauſes and accompanied with ſymptoms of debility.
3. Amauroſis (*ſpaſmodica*), after the cauſes and with the ſigns of ſpaſm.
4. Amauroſis (*venenata*), from poiſon taken into the body or applied outwardly to it.

Genus XCIV. Dyſopia. A deprivation of the ſight, ſo that objects cannot be diſtinctly perceived, except at a certain diſtance, and in a certain ſituation. The ſpecies are,

1. Dyſopia (*tenebrarum*), in which objects are not ſeen unleſs they be placed in a ſtrong light.
2. Dyſopia (*luminis*), in which objects are not diſtinctly ſeen unleſs by a weak light.
3. Dyſopia (*diſſitorum*), in which diſtant objects are not perceived.

4. Dyſopia (*proximorum*), in which the neareſt objects are not perceived.

5. Dyſopia (*lateralis*), in which objects are not perceived unleſs placed in an oblique poſture.

Genus XCV. Pſeudoblepſis. When the ſight is diſeaſed in ſuch a manner that the perſon imagines he ſees things which really do not exiſt, or ſees things which do exiſt after ſome other manner than they really are. The ſpecies are,

1. Pſeudoblepſis (*imaginaria*,) in which the perſon imagines he ſees things which really do not exiſt.

Varying according to the nature of the imagination.

2. Pſeudoblepſis (*mutans*), in which objects really exiſting appear ſomehow changed.

Varying according to the change perceived in the objects, and according to the remote cauſe.

Genus XCVI. Dyſecœa. A diminution or total abolition of the ſenſe of hearing. The ſpecies are,

1. Dyſecœa (*organica*), from a diſeaſe in the organs tranſmitting ſounds to the internal ear.

Varying according to the nature of the diſeaſe and of the part affected.

3. Dyſecœa (*atonica*), without any evident diſeaſe of the organs tranſmitting the ſounds.

Varying according to the nature of the cauſe.

Genus XCVII. Paracuſis. A depravation of the hearing. The ſpecies are,

1. Paracuſis (*imperfecta*), in which though ſounds coming from external objects are heard, yet it is neither diſtinctly nor in the uſual manner.

Varying,

a, With a dulneſs of hearing.

b, With a hearing too acute and ſenſible.

c, When a ſingle external ſound is doubled by ſome internal cauſes.

d, When the ſounds which a perſon deſires to hear are not perceived, unleſs ſome other violent ſound is raiſed at the ſame time.

2. Paracuſis (*imaginaria*), in which ſounds not exiſting externally are excited from internal cauſes.

Varying according to the nature of the ſound perceived, and according to the nature of the remote cauſe.

Genus XCVIII. Anoſmia. A diminution or abolition of the ſenſe of ſmell. The ſpecies are,

1. Anoſmia (*organica*), from a diſeaſe in the membrane lining the internal parts of the noſtrils.

Varying according to the nature of the diſeaſe.

2. Anoſmia (*atonica*), without any evident diſeaſe of the membrane of the noſe.

Genus XCIX. Agheuſtia. A diminution or abolition of the ſenſe of taſte.

1. Agheuſtia (*organica*), from a diſeaſe in the membrane of the tongue, keeping off from the nerves thoſe ſubſtances which ought to produce taſte.
2. Agheuſtia (*atonica*), without any evident diſeaſe of the tongue.

Genus C. Anæſtheſia. A diminution or abolition of the ſenſe of feeling. The ſpecies from Sauvages, adopted by Dr. Cullen, are,

1. Anæſtheſia a ſpina bifida.
2. Anæſtheſia plethorica.
3. Anæſtheſia naſcentium.
4. Anæſtheſia melancholica.

Order II. Dyſorexia. Error or defect in appetite.

Sect. I. Appetitus erronei.

Genus CI. Bulimia. A deſire for food in greater quantities than can be digeſted.

The idiopathic ſpecies are,

1. Bulimia (*helluonum*), an unuſual appetite for food, without any diſeaſe of the ſtomach.
2. Bulimia (*ſyncopalis*), a frequent deſire of meat, on account of a ſenſation of hunger threatening ſyncope.
3. Bulimia (*emetica*), an appetite for a great quantity of meat, which is thrown up immediately after it is taken.

Genus CII. Polydipſia. An appetite for an unuſual quantity of drink.

The polydipſia is almoſt always ſymptomatic, and varies only according to the nature of the diſeaſe which accompanies it.

Genus CIII. Pica. A deſire of ſwallowing ſubſtances not uſed as food.

Genus CIV. Satyriaſis. An unbounded deſire of venery in men. The ſpecies are,

1. Satyriaſis (*juvenilis*), an unbounded deſire of venery, the body at the ſame time being little diſordered.
2. Satyriaſis (*furens*), a vehement deſire of venery, with a great diſorder of the body at the ſame time.

Genus CV. Nymphomania. An unbounded deſire of venery in women. Varying in degree.

Genus CVI. Noſtalgia. A violent deſire in thoſe who are abſent from their country of reviſiting it.

1. Noſtalgia (*ſimplex*), without any other diſeaſe.
2. Noſtalgia (*complicata*), accompanied with other diſeaſes.

Sect. II. Appetitus deficientes.

Genus CVII. Anorexia. Want of appetite for food. Always ſymptomatic.

1. Anorexia (*humoralis*), from ſome humour loading the ſtomach.
2. Anorexia (*atonica*), from the tone of the fibres of the ſtomach being loſt.

Genus CVIII. Adipſia. A want of thirſt. Always a ſymptom of ſome diſeaſe affecting the ſenſorium commune.

Genus CIX. Anaphrodiſia. Want of deſire for, or impotence to, venery. The true ſpecies are,

1. Anaphrodiſia paralytica.
2. Anaphrodiſia gonorrhoica.

The falſe ones are,

1. Anaphrodiſia a mariſcis.
2. Anaphrodiſia ab urethræ vitio.

Order III. Dyſcineſiæ. An impediment, or depravation of motion from a diſorder of the organs.

Genus CX. Aphonia. A total ſuppreſſion of voice without coma, or ſyncope. The ſpecies are,

1. Aphonia (*gutturalis*), from the fauces or glottis being ſwelled.
2. Aphonia (*trachealis*), from a compreſſion of the trachea.
3. Aphonia (*atonica*), from the nerves of the larynx being cut.

Genus CXI. Mutitas. A want of power to pronounce words. The ſpecies are,

1. Mutitas (*organica*), from the tongue being cut out or deſtroyed.
2. Mutitas (*atonica*), from the injuries done to the nerves of the tongue.
3. Mutitas (*ſurdorum*), from people being born deaf, or the hearing being deſtroyed during childhood.

Genus CXII. Paraphonia. A depraved ſound of the voice. The ſpecies are,

1. Paraphonia (*puberum*), in which, about the time of puberty, the voice, from being acute and ſweet, becomes more grave and harſh.
2. Paraphonia (*rauca*), in which, by reaſon of the dryneſs

or flaccid tumor of the fauces, the voice becomes rough and hoarſe.

3. Paraphonia (*reſonans*), in which, by reaſon of an obſtruction in the noſtrils, the voice becomes hoarſe, with a ſound hiſſing through the noſtrils.

4. Paraphonia (*palatina*), in which, on account of a defect or diviſion of the uvula, for the moſt part with an hare lip, the voice becomes obſcure, hoarſe, and unpleaſant.

5. Paraphonia (*clangens*), in which the voice is changed to one acute, ſhrill, and ſmall.

6. Paraphonia (*comatoſa*), in which, from a relaxation of the velum palati and glottis, a ſound is produced during inſpiration.

Genus CXIII. Pſelliſmus. A defect in the articulation of words. The ſpecies are,

1. Pſelliſmus (*hæſitans*), in which the words, eſpecially the firſt ones of a diſcourſe, are not eaſily pronounced, and not without a frequent repetition of the firſt ſyllable.

2. Pſelliſmus (*ringens*), in which the ſound of the letter R is always aſpirated, and, as it were, doubled.

3. Pſelliſmus (*lallans*), in which the ſound of the letter L becomes more liquid, or is pronounced inſtead of R.

4. Pſelliſmus (*emolliens*), in which the hard letters are changed into the ſofter ones, and thus the letter S is much uſed.

5. Pſelliſmus (*balbutiens*), in which, by reaſon of the tongue being large, or ſwelled, the labial letters are better heard, and often pronounced inſtead of others.

6. Pſelliſmus (*acheilos*), in which the labial letters cannot be pronounced at all, or with difficulty.

7. Pſelliſmus (*logoſtomatum*), in which, on account of the diviſion of the palate, the guttural letters are leſs perfectly pronounced.

Genus CXIV. Strabiſmus. The optic axes of the eyes not converging. The ſpecies are,

1. Strabiſmus (*habitualis*), from a bad cuſtom of uſing only one eye.

2. Strabiſmus (*commodus*), from the greater debility or mobility of one eye above the other; ſo that both eyes cannot be conveniently uſed.

3. Strabiſmus (*neceſſarius*), from a change in the ſituation or ſhape of the parts of the eye.

Genus CXV. Contractura. A long-continued and rigid contraction of one or more limbs. The ſpecies are,

1. Contractura (*primaria*), from the muſcles becoming contracted and rigid.

a, From the muſcles becoming rigid by inflammation.

b, From muſcles becoming rigid by ſpaſm.

c, From muſcles contracted by reaſon of their antagoniſts having become paralytic.
d, From muſcles contracted by an irritating acrimony.
2. Contractura (*articularis*), from ſtiff joints.

ORDER IV. Apocenoſes. A flux either of blood or ſome other humour flowing more plentifully than uſual, without pyrexia, or an increaſed impulſe of fluids.

Genus CXVI. Profuſio. A flux of blood.

Genus CXVII. Ephidroſis. A preternatural evacuation of ſweat.

Symptomatic ephidroſes vary according to the nature of the diſeaſes which they accompany, the different nature of the ſweat itſelf, and ſometimes the different parts of the body which ſweat moſt.

Genus CXVIII. Epiphora. A flux of the lachrymal humour.

Genus CXIX. Ptyaliſmus. A flux of ſaliva.

Genus CXX. Enureſis. An involuntary flux of urine without pain.
1. Enureſis (*atonica*), after diſeaſes injuring the ſphincter of the bladder.
2. Enureſis (*irritata*), from a compreſſion or irritation of the bladder.

Genus CXXI. Gonorrhœa. A preternatural flux of humour from the urethra in men, with or without a deſire of venery. The ſpecies are,
1. Gonorrhœa (*pura*), in which, without any impure venery having preceded, a humour reſembling pus, without dyſuria or propenſity to venery, flows from the urethra.
2. Gonorrhœa (*impura*), in which, after impure venery, an humour like pus flows from the urethra with dyſuria. The conſequence of this is,
3. Gonorrhœa (*mucoſa*), in which, after an impure gonorrhœa, a mucous humour flows from the urethra, with little or no dyſuria.
4. Gonorrhœa (*laxorum*), in which an humour for the moſt part pellucid, without any erection of the penis, but with a propenſity to venery, flows from the urethra while the perſon is awake.
5. Gonorrhœa (*dormientium*), in which the ſeminal liquor is thrown out, with erection and deſire of venery, in thoſe who are aſleep and have laſcivious dreams.

ORDER V. Epiſcheſes. Suppreſſions of evacuations.

Genus CXXII. Obſtipatio. The ſtools either ſuppreſſed, or ſlower than uſual. The ſpecies are,

1. Obſtipatio (*debilium*), in lax, weak, and for the moſt part dyſpeptic perſons.
2. Obſtipatio (*rigidorum*), in people whoſe fibres are rigid, and frequently of an hypochondriac diſpoſition.
3. Obſtipatio (*obſtructorum*), with ſymptoms of the colica, 1ſt, 2d, 4th, and 7th, above mentioned.

Genus CXXIII. Iſchuria. An abſolute ſuppreſſion of urine. The ſpecies are,

1. Iſchuria (*renalis*), coming after a diſeaſe of the kidneys, with pain, or troubleſome ſenſe of weight in the region of the kidneys, and without any ſwelling of the hypogaſtrium, or deſire of making water.
2. Iſchuria (*ureterica*), coming after a diſeaſe of the kidneys, with a ſenſe of pain or uneaſineſs in ſome part of the ureter, and without any tumor of the hypogaſtrium, or deſire of making water.
3. Iſchuria (*veſicalis*), with a ſwelling of the hypogaſtrium, pain of the neck of the bladder, and a frequent ſtimulus to make water.
4. Iſchuria (*urethralis*), with a ſwelling of the hypogaſtrium, frequent ſtimulus to make water, and pain in ſome part of the urethra.

All theſe ſpecies are ſubdivided into many varieties, according to their different cauſes.

Genus CXXIV. Dyſuria. A painful, and ſomehow impeded emiſſion of urine. The ſpecies are,

1. Dyſuria (*ardens*), with heat of water, without any manifeſt diſorder of the bladder.
2. Dyſuria (*ſpaſmodica*), from a ſpaſm communicated from the other parts of the bladder.
3. Dyſuria (*compreſſionis*), from the neighbouring parts preſſing upon the bladder.
4. Dyſuria (*phlogiſtica*), from an inflammation of the neighbouring parts.
5. Dyſuria (*irritata*), with ſigns of a ſtone in the bladder.
6. Dyſuria (*mucoſa*), with a copious excretion of mucus.

Genus CXXV. Dyſpermatiſmus. A ſlow, impeded, and inſufficient emiſſion of ſemen in the veneral act. The ſpecies are,

1. Dyſpermatiſmus (*urethralis*), from diſeaſes of the urethra.
2. Dyſpermatiſmus (*nodoſus*), from knots on the cavernous bodies.
3. Dyſpermatiſmus (*præputialis*), from too narrow an orifice of the prepuce.
4. Dyſpermatiſmus (*mucoſus*), from mucus infarcting the urethra.
5. Dyſpermatiſmus (*hypertonicus*), from too ſtrong an erection of the penis.

6. Dyſpermatiſmus (*epilepticus*), from a ſpaſmodic epilepſy happening during the time of coition.
7. Dyſpermatiſmus (*apractodes*), from an imbecility of the parts of generation.
8. Dyſpermatiſmus (*refluus*), in which there is no emiſſion of ſemen, becauſe it returns from the urethra into the bladder.

Genus CXXVI. Amenorrhœa. The menſes either flowing more ſparingly than uſual, or not at all, at their uſual time, without pregnancy. The ſpecies are,

1. Amenorrhœa (*emanſionis*), in thoſe arrived at puberty, in whom, after the uſual time, the menſes have not yet made their appearance, and many different morbid affections have taken place.
2. Amenorrhœa (*ſuppreſſionis*), in adults, in whom the menſes which had already begun to flow are ſuppreſſed.
3. Amenorrhœa (*difficilis*), in which the menſes flow ſparingly, and with difficulty.

Order VI. Tumores. An increaſed magnitude of any part without phlogoſis.

Genus CXXVII. Aneuriſma. A ſoft tumor, with pulſation, above an artery.

Genus CXXVIII. Varix. A ſoft tumor, without pulſation, above a vein.

Genus CXXIX. Ecchymoma. A diffuſed, and ſcarce eminent, livid tumor.

Genus CXXX. Scirrhus. An hard tumor of ſome part, generally of a gland, without pain, and difficultly brought to ſuppuration.

Genus CXXXI. Cancer. A painful tumor of a ſcirrhous nature, and degenerating into an ill-conditioned ulcer.

Genus CXXXII. Bubo. A ſuppurating tumor of a conglobate gland.

Genus CXXXIII. Sarcoma. A ſoft ſwelling without pain.

Genus CXXXIV. Verruca. A harder ſcabrous ſwelling.

Genus CXXXV. Calvus. A hard, lamellated thickneſs of the ſkin.

Genus CXXXVI. Lupia. A moveable, ſoft tumor below the ſkin, without pain.

Genus CXXXVII. Ganglion. An harder moveable ſwelling, adhering to a tendon.

Genus CXXXVIII. Hydatis. A cuticular veſicle filled with aqueous humour.

Genus CXXXIX. Hydarthrus. A moſt painful ſwelling of the

joints, chiefly of the knee, at firſt ſcarce elevated, of the ſame colour with the ſkin, diminiſhing the mobility.

Genus CXL. Exoſtoſis. A hard tumor adhering to a bone.

ORDER VII. Ectopiæ. Tumors occaſioned by the removal of ſome part out of its proper ſituation.

Genus CXLI. Hernia. An ectopia of a ſoft part as yet covered with the ſkin and other integuments.

Genus CXLII. Prolapſus. A bare ectopia of ſome ſoft part.

Genus CXLIII. Luxatio. The removal of a bone from its place in the joints.

ORDER VIII. Dialyſes. A ſolution of continuity; manifeſt to the ſight or touch.

Genus CXLIV. Vulnus. A recent and bloody ſolution of the unity of ſome ſoft part by the motion of ſome hard body.

Genus CXLV. Ulcus. A purulent or ichorous ſolution of a ſoft part.

Genus CXLVI. Herpes. A great number of phlyctenæ or ſmall ulcers, gathering in cluſters, creeping, and obſtinate.

Genus CXLVII. Tinea. Small ulcers among the roots of the hair of the head, pouring out a humour which changes to a white friable ſcurf.

Genus CXLVIII. Pſora. Itchy puſtules and little ulcers of an infectious nature, chiefly infeſting the hands.

Genus CXLIX. Fractura. Bones broken into large fragments.

Genus CL. Caries. An exulceration of a bone.

Having thus preſented to our readers a general ſyſtematic view of all the diſeaſes to which the human body is liable, we come next to give a particular account of the more important affections and their treatment; and in the execution of this part of our taſk, we hope to render the intelligent practitioner no inconſiderable ſervice by introducing, in their proper places, the valuable FORMULÆ which are in uſe in the different PUBLIC HOSPITALS in LONDON, as well as ſome adopted in the private practice of the moſt eminent phyſicians.

It may be neceſſary farther to obſerve, that the ſeveral remedies directed in the caſes of which we treat, are to be underſtood as referring to the new PHARMACOPŒIA of the LONDON COLLEGE.

THERAPEUTICS;

OR,

THE PRACTICE OF MEDICINE.

IT has already being obſerved, that SAUVAGES was the firſt who attempted to arrange diſeaſes according to the plan ſuggeſted by Sydenham; and his work ſtill continues the only one that merits the title of *Methodical Noſology*. For though Linnæus, Vogel, Cullen, and Sagar, have ſucceſſively endeavoured to improve his method of claſſification, they have contented themſelves with an enumeration and arrangement of the different genera, without entering into their hiſtory and cure: ſo that, though we have ſince had various *Schemes of Arrangement*, we have had, properly ſpeaking, no complete *Syſtem of Noſology*; that is, no complete COURSE OF MEDICINE according to any of theſe arrangements. Preſuming, therefore, that a practice formed upon the moſt approved claſſification, in imitation of the work of Sauvages, might be eſteemed an acquiſition by medical men, we have endeavoured to execute that taſk in the preſent part of this treatiſe; wherein the practice is modelled on the arrangement of Dr. Cullen; and the outline filled up from the beſt authors, ſo as to exhibit the moſt approved methods of treatment, with the lateſt diſcoveries and improvements in the healing art.

Our firſt taſk will be to ſpeak of FEBRILE DISEASES; and in doing this we ſhall not depart from our original deſign of taking Dr. CULLEN for our guide. Nevertheleſs we are induced, in addition to what has been ſaid under the head of Theory of Medicine, to preface this portion of our undertaking with Dr. Baeta's Comparative View of the Theories and Practice of Drs. Cullen, Brown, and Darwin, in the Treatment of Fever and of Acute Rheumatiſm; obſerving, that he occaſionally alludes to Dr. CULLEN'S Spaſmodic Theory of Fever, which we have already fully detailed.

Dr. Brown's Theory of Fever is thus concifely ſtated by Dr. Baeta.

" Dr. Brown ſuppoſes the proximate cauſe of fever to conſiſt in debility (Elem. of M. par. 679.); which may be either direct or indirect, according to the nature of the noxious powers which were previouſly applied to the ſyſtem. (Elem. of M. par. 681.) Hence he makes two diviſions of fevers;—1ſt, Thoſe which depend on direct debility: in this he ranks ſome intermittent fevers, the typhus mitior and gravior, the plague, &c. (Elem. of M. par. 685, 6.)—2d, Thoſe which depend on indirect debility: under which diviſion he ranks ſome intermittents, and ſome continued fevers, occaſioned by drunkenneſs, the confluent ſmall-pox, &c. (Elem. of M. par. 687.) Hence he forms two indications in the cure of fevers, juſt according to thoſe diviſions for removing direct and indirect debility. (Elem of M. par. 103—110.), viz. In fevers dependent on direct debility, he recommends diffuſible ſtimuli in ſmall doſes, and often repeated (par. 686); in thoſe dependent on indirect debility, he orders the largeſt doſes of ſtimuli (par. 687.)

Before he enters into the conſideration of Dr. Darwin's doctrine of fever, the author lays down the following principles deduced from the Zoonomia.

" 1ſt. There is in every part of the animal ſyſtem a living principle, which is termed ſenſorial power, and which is conſidered as the immediate cauſe of all its motions. (Zoon. part i. ſect. 4.) This is ſuppoſed to be ſecreted in the brain and ſpinal marrow. (Zoon. part i. ſect. 12, 2, 1.)

" 2d. This living principle is capable of being acted upon in four different ways, viz. it poſſeſſes four different faculties or modes of action, which in their inactive ſtate are called irritability, ſenſibility, voluntarity, and aſſociability; and in their active ſtate, or while they are exerted, they are termed irritation, ſenſation, volition, and aſſociation. (Zoon. vol. i. ſect. 5.)

" 3d. The faculty of that living principle, which is termed irritability, is exerted in conſequence of the ſtimulus of external bodies acting on any part of the ſyſtem where ſenſorial power reſides, and it then may produce fibrous motions. That of ſenſibility is exerted in conſequence of the ſtimulus of pleaſure or pain, occaſioned by the fibrous motions produced by the ſenſorial power of irritation at firſt. That of voluntarity is exerted in conſequence of the ſtimulus of deſire or averſion occaſioned by the fibrous motions produced by the ſenſorial power of ſenſation at firſt. That of aſſociability is at firſt exerted in conſequence of the ſtimulus of any fibrous motions, previouſly occaſioned either by irritation, ſenſation, or volition. (Zoon. vol. i. ſect. 4 and 12.)

" 4th. During the application of any of theſe ſtimuli (Prin. 3d), the living principle, or ſenſorial power, becomes exhauſted; on the contrary, during the ſuſpenſion of any of theſe ſtimuli the ſenſorial power becomes accumulated.

" 5th. There are various circles of aſſociate motions in the ani-

mal syſtem, which may take their names from the nature of their introductory link: that is, thoſe circles the introductory link of which conſiſts of an irritative motion, may be termed circles of irritative aſſociate motions; thoſe, the introductory link of which conſiſts of a ſenſitive motion, circles of ſenſitive aſſociate motions; and laſtly, thoſe, the introductory link of which conſiſts of a voluntary motion, circles of voluntary aſſociate motions. (Zoon. vol. ii. Claſs IV. 1, 1, B.)

"6th. The links of each of theſe circles act on one another by means of the ſenſorial power, which in its inactive ſtate is called ſenſorial power of aſſociability, and in its active ſtate ſenſorial power of aſſociation. (Zoon. vol. i. ſect. 5.)

"7th. Theſe circles of aſſociate motions may be affected by other ſenſorial motions, occaſioned by the ſenſorial powers of irritability, ſenſibility, and voluntarity. (Zoon. vol. ii. Claſs IV. 1, 1, D.)

"8th. Each of theſe great circles of aſſociate motions may be conſidered as compounded of ſmaller circles, that is, the great circle of irritative aſſociate motions may be looked on as a collection of ſmaller circles of the ſame kind. (Zoon. Suppl. 1ſt 6.)

"9th. The introductory link of any circle of aſſociate motions, may have its action increaſed, or decreaſed, or in its natural degree. The firſt may take place either in conſequence of exceſs of ſenſorial power, the ſtimuli being in their accuſtomed degree; or, in conſequence of exceſs of ſtimuli, the ſenſorial power being in its natural degree; or in conſequence of exceſs of both. The ſecond may ariſe either from want of ſenſorial power, the ſtimulus being in its uſual degree; or from ſubduction of ſtimuli, the ſenſorial power being in its natural quantity; or from want of ſenſorial power, and ſubduction of ſtimuli. The third takes place, when both the ſenſorial power and the ſtimuli are in a proper degree.

"10th. Sometimes the morbid increaſed, as well as the morbid decreaſed, actions of the introductory link of a circle of aſſociate motions are followed by ſimilar actions of the other links; at other times by contrary actions: in the firſt caſe we have direct, in the ſecond indirect ſympathy. (Zoon. vol. i. ſect. 35, 1; and vol. ii. Claſs IV. 1, 1, F.)

"11th. The morbid decreaſed actions, which ariſe from ſubduction of ſtimuli, are ſooner overcome than thoſe which are occaſioned by want of ſenſorial power. (Zoon. vol. ii. Sup. 1. 12, 10.)

"12th. The morbid increaſed actions, which ariſe from exceſs of ſenſorial power, are more violent than thoſe which are produced by exceſs of ſtimuli. Hence inflammatory diſeaſes are commonly preceded by ſubduction of ſtimuli, and conſequent accumulation of ſenſorial power, &c. But when exceſs of ſenſorial power is acted

upon by excefs of ftimuli, the exertion which follows is far fuperior. Hence mortification of frozen limbs, when brought near the fire. (Zoon. vol. ii. Clafs III. 2. 1. 17.)

" 13th. Thofe parts which are fubjected, during health, to perpetual action, as the heart and arteries, accumulate fenforial power faster, when their motions are impeded, than thofe which are fubjected to intermitted action. (Zoon. vol. ii. Suppl. 1. 3. 1.)

" 14th. When ftimuli, which are ufually applied to a certain part of the fyftem, are fubducted from it, an accumulation of fenforial power takes place there, proportioned to the fubduction of thofe ftimuli, and to the ftate of that part.

" 15th. The exertion of any part of the fyftem may be either proper, or greater, or fmaller than it ought to be; and fo either health, or inflammation, and the various degrees of exhauftion of fenforial power, or torpor from accumulation of fenforial power, will enfue.

" 16th. Fever confifts of one or more difordered trains or tribes of affociated motions. (Zoon. vol. ii. Clafs II. 1. 2.) Hence fever will be more or lefs complicated, according to the number of the tribes difordered.

" After thefe principles, Dr. Darwin's doctrine of fever may be confidered as follows: When the torpor of any part of the fyftem, owing to deficient irritation, occafioned either by the fubduction of the natural ftimuli, and confequent accumulation of fenforial power, or by the application of powerful ftimuli, and confequent exhauftion of the fame living principle (Prin. 4th, 7th, and 14th), is fuch as to occafion decreafed actions of that part, what happens? The next link of the tribe of affociate motions falls alfo into a torpor, from defect of excitement of the fenforial power of affociation, and fo the fubfequent one, till a general torpor affects the fyftem. This conftitutes the cold paroxyfm of fever. This general torpor remains, till the accumulation of the fenforial power of affociation has been formed, which may overbalance that defect of excitement of affociation, and then the torpor ceafes, and the hot fit of fever is produced.

" When the torpor of the part firft affected is occafioned by the fubduction of the natural ftimuli, this part is likewife thrown into increafed actions during the hot fit. But if it arife from exhauftion of fenforial power, this part remains in a torpid ftate during the hot fit. (Prin. 11.)

" The torpor induced by the fubduction of the natural ftimuli, as it is overcome at the end of the cold fit (§ XVIII.), always gives rife to fevers with ftrong pulfe; fince in this cafe all the parts of the fyftem have their actions increafed during the hot fit. (Prin. 12.)

" The torpor induced by the exhauftion of fenforial power produces various effects, according to the part in which it takes

place. When it takes place in the ſtomach, it is always a cauſe of continued fever with weak pulſe. (Zoonomia, vol. ii. Suppl. 1. 16. 9.) In this caſe, in conſequence of the torpid ſtate of the ſtomach, the arterial ſyſtem fails likewiſe into a torpor, from defect of the excitement of the ſenſorial power of aſſociation (Princ. 6 and 10.); therefore an accumulation of this ſenſorial power of aſſociation takes place in the arterial ſyſtem: but this accumulation is ſo great, owing to the perpetual actions of the ſtomach catenated with thoſe of the arterial ſyſtem (Princ. 13.), that it affects the next link of the aſſociate train, that is, the capillaries, with increaſed energy (Princ. 10.) Hence theſe laſt, in this kind of fever, are perpetually exerted with great increaſe of action.

" When this torpor affects the cecerning veſſels of the brain, Dr. Darwin thinks, that it is a cauſe of fever with arterial debility. (Zoonomia, vol. ii. Suppl. 1. 10.) In this caſe, the ſecretion of ſenſorial power being more or leſs impaired, muſt occaſion languid actions of every part of the ſyſtem (Princ. 1.) In fevers, with arterial debility, ariſing from this cauſe, the actions of the capillaries are diminiſhed along with the actions of the reſt of the ſyſtem. Hence the heat of the body is never above the natural ſtandard, and ſometimes it is even lower throughout the courſe of the diſeaſe; which phenomenon we have obſerved ſometimes in patients labouring under continued fever with arterial debility.

" Though Dr. Darwin does not mention the torpor from exhauſtion of ſenſorial power in the arterial ſyſtem, as a cauſe of continued fever with arterial debility, yet, conſidering that the ſtimulus of the blood may be more or leſs increaſed, in conſequence of a greater or ſmaller quantity of oxygen, we make the following query: May not the ſenſorial power of irritation be accumulated for a while in the arterial ſyſtem, by the ſubduction of the ſtimulus oxygen? And afterwards by a ſudden application of this ſtimulus in a great degree, that is, by inſpiring at once a large quantity of pure oxygen gas, may not a violent exertion take place there, ſo as to produce an exhauſtion of the ſenſorial power of irritation, and to render the arterial ſyſtem unfit to derive from the brain and ſpinal marrow a proper quantity of ſenſorial power (See note (*l*) Princip. 11.), which may therefore give riſe to a fever with arterial debility?

" When the torpor from exhauſtion of ſenſorial power affects other parts of the ſyſtem, which have their actions aſſociated with thoſe of the ſtomach, as, for inſtance, the ſpleen, liver, &c. the ſtomach falls into a torpor, from defect of excitement of the ſenſorial power of aſſociation, and ſo the arterial ſyſtem, till a general torpor is formed, which conſtitutes the cold fit (Sect. xvii.) Now, during the cold fit an accumulation of ſenſorial power of aſſociation takes place in the ſtomach, arterial ſyſtem, &c. which overbalances this defect of excitement of the ſenſorial power of

aſſociation: conſequently, theſe parts are thrown into increaſed actions. This conſtitutes the hot fit, which according to the accumulation of the ſenſorial power of aſſociation, and to the ſtimuli applied to it, will produce various effects. (Princip. 4. and note (*n*) Princip. 15.) Thus either theſe increaſed actions may be proper, to reduce the ſenſorial power of aſſociation, accumulated during the cold fit, to its juſt limits, and at the ſame time to affect, by means of aſſociate motions (Princip. 5. and 8.), that part which is torpid from exhauſtion of ſenſorial power, ſo as to reſtore its juſt degree of deriving ſenſorial power from the brain and ſpinal marrow; and then the fever is cured: or theſe increaſed actions merely reduce the ſenſorial power of aſſociation to its natural ſtandard, while the ſpleen, liver, &c. remain yet in a torpid ſtate, which, either by its degree, or by the concurrence of other cauſes, may induce again the torpor of the ſtomach, &c. in conſequence of defect of excitement of the ſenſorial power of aſſociation. Hence various kinds of intermittent fevers, or theſe increaſed actions, may be in ſuch a degree, as to occaſion ſenſation. Hence inflammatory fevers (Princip. 15.) Or laſtly, theſe increaſed actions may, in conſequence of their violence, produce a ſmaller, or greater, or complete exhauſtion of ſenſorial power, in ſome part eſſential to life. Hence various kinds of continued fever with arterial debility (Sect. xx. xxi. and xxii.) or even death (Princip. 15.)

"From Sect. xvi.—xxiii. it will appear, that Dr. Darwin's Doctrine of Fever explains the various phenomena which take place in this diſeaſe: viz. it accounts, 1ſt, For the formation of the cold fit, and decreaſed actions of the ſyſtem, which are obſervable in it (Sect. xvii.): 2dly, For the formation of the hot fit, &c. (Sect. xvii.): 3dly, For the phenomena which attend the hot fit of fevers with arterial ſtrength (Sect. xix. and xxiii.): 4thly, For the intermiſſion of fevers (Sect. xxiii.): 5thly, For the change from intermittent to continued fevers (Sect. xxii.): 6thly, For the phenomena which take place in ſome continued fevers with arterial debility; that is, the decreaſed actions of the ſtomach and arterial ſyſtem, as evinced by the want of appetite and weak pulſe; and for the increaſed actions of the capillaries, as evinced by the increaſed heat (Sect. xx.): 7thly, For the abſence of the increaſed actions of the capillaries, in ſome fevers with arterial debility, as evinced by the abſence of increaſed heat over the body (Sect. xxi.): Laſtly, For the long duration of continued fever with arterial debility (Sect. xxviii.)

"From the ſame doctrine of fever the moſt proper indications of cure are deduced.—1ſt, According to it, we muſt excite the ſyſtem in the cold fit of fevers, taking care, however, to proportion the ſtimuli to the ſenſorial power already accumulated. By theſe means we prevent the accumulation of ſenſorial power,

which may give rise either to the hot fit (Sect. xvii.), or to inflammation, &c. (Sect. xxiii.) Hence Dr. Darwin's expression (Zoonomia, vol. i. Sect. 12.), 'The true means of curing fever (with strong pulse) must be such as decrease the action of the system in the hot fit, and increase it in the cold fit.'

"2dly, According to the same doctrine, during the hot fit of fevers with arterial strength, we are led to diminish the increased action of the system: since by this means we prevent the inflammation, which may arise during the hot fit in consequence of these increased actions, and various other disorders (Sect. xxiii.) Hence Dr. Darwin says (Zoonomia, vol. ii. Supl. 1. 16. 9.), 'The cure of fever with strong pulse (in the hot fit) consists in the repeated use of venesection, gentle cathartics, diluents, &c.'

"3dly, According to the same theory, it appears, that the cure of fevers with arterial debility and increased actions of the capillaries (Sect. xx.) consists in restoring the energy of the stomach and arterial system, and in decreasing the morbid increased actions of the capillaries. The first of these is obtained, by exciting into action the torpid stomach (and consequently the arterial system) either directly, as by wine, opium, bark, &c. and food in small repeated quantities; by slight electric shocks passed through it; by fomentations with water, heated to 96 or 100 degrees of Fahrenheit's thermometer; by exciting its power of association with other parts of the system, as by a blister, or indirectly, as by the exhibition of emetics, or iced water, &c. Hence the remarkably good effects of wine, bark, emetics, &c. in cases of fever, related by the author, chiefly in that of R. Feemiston, under Dr. Hope's care. The second of these indications is obtained by free admission of cold air, and chiefly by the ablution with, or affusion of cold water over the surface. Hence the manifest utility of the affusion with cold water, ordered by Dr. Gregory in the cases alluded to, and likewise of the affusion of cold water, so much recommended by Dr. Currie. When these two means, viz. the invigorating the actions of the stomach, &c. by small repeated doses of stimuli, and the weakening the energetic actions of the capillaries of the skin, by ablution with or affusion of cold water, are used conjointly, they are found to be of the greatest utility in the cure of fevers of this kind.

"Lastly, from Dr. Darwin's doctrine, it appears, that in fevers, with arterial debility and decreased actions of the capillaries (Sect. xxi.), the cure consists in restoring the energy of the system, but particularly of the secerning vessels of the brain. Hence all those substances which may have the power of exciting these vessels, will be useful in this kind of fevers. Opium and wine are supposed by Dr. Darwin to possess this power (Zoonomia, vol. ii. Supl. 1. 16. 9). In this kind of fever Dr. Darwin recommends also hot fomentations to the head, small electric shocks passed through it, and

ſmall bliſters. Might not the warm bath be uſed with utility in theſe fevers? The reſpiration of oxygen gas, diluted with atmoſpheric air (ſays Dr. Darwin), would be uſeful in ſuch fevers. (Zoonomia, vol. ii. Supl. 1. 11. 7.) Might not this remedy, when well managed, be found uſeful in thoſe fevers which may ariſe from the exhauſtion of the ſenſorial power of irritation in the arterial ſyſtem? (See Sect. xxii.) The utility of inſpiring oxygen gas, diluted with atmoſpheric air, in fevers with arterial debility, is related by Dr. Thornton (See Dr. Beddoes's Conſiderations on the medical Powers of factitious Airs, part iv. and v. p. 135.)

"From the explanation given, Sect. ii.—vii. it is, I think, evident;—1ſt, That by means of Dr. Cullen's doctrine of fever we cannot account for the phenomena which take place in this diſeaſe. —2dly, That from this doctrine we cannot draw any proper indication of cure in it. Likewiſe from what is contained in Sect ix.—xv. it will appear,—1ſt, That Dr. Brown's Theory of Fever does not account either for certain phenomena which are obſervable in the hot fit of intermittent fevers, or for the increaſed heat over the body in ſome continued fevers with arterial debility.—2dly, That from this doctrine we cannot draw what may be called a complete indication of cure in fevers. For it always rejects a remedy which is ſometimes uſeful; and uniformly recommends one, which is, at times, or generally, noxious in the hot fit of intermittent fevers:—And, laſtly, it always rejects one of the moſt uſeful remedies in the cure of ſome continued fevers with arterial debility; and alſo of intermittent fevers, when uſed during the hot fit, when the heat of the body is above the natural ſtandard, &c. But from the account given Sect. xvi.—xxiii. as mentioned Sect. xxiv.—xxviii. it is manifeſt that Dr. Darwin's Theory of Fever—1ſt, Accounts for the various phenomena obſervable in this diſeaſe.—2dly, Affords the moſt proper indications of cure in it; and at the ſame time explains the operation of the remedies, by which theſe indications are fulfilled.

Class I. PYREXIÆ (the Febrile Diſeaſes of other Authors).

Order I. FEBRES.

Sauvag. Claſs II. *Vog.* Claſs I. *Sagar*, Claſs XII. Morbi Febriles Critici, *Lin.* Claſs II.

Sect. I. Intermittents.

Intermittentes of ſome authors; *Sauv.* Claſs II. Order III. *Lin.* Claſs II. Order II. *Vog.* Claſs I. Order I. *Sag.* Claſs XII. Order III.

The *remittentes* of others, *Sauv.* Claſs II. Order II. *Sag.* Claſs XII. Order II.

Exacerbantes, *Lin.* Claſs II. Order III.

Continuæ, *Vog.* Claſs I. Order II.

Genus I. TERTIANA; the Tertian Fever.

(*Tertiana*, Sauv. G. 88 Lin. 16. Hoffm. Stahl. Cleghorn. Senac.)

I. The *Genuine* Tertian.

(Tertiana legitima, *Senert. Hoffm. Cleghorn*, Minorc. *Sauv.* Sp. I.)

1. *Deſcription.*] This diſeaſe comes on in the morning, or from breakfaſt to dinner-time. It begins with a remarkable ſhivering, increaſing frequently to a kind of convulſive ſhaking of the limbs. The extremities are always cold, ſometimes remarkably ſo. The cold for the moſt part is firſt perceived about the lumbar regions, and from thence aſcending along the ſpine turns towards the pit of the ſtomach. Sometimes it begins in the firſt joint of the fingers and tip of the noſe. Sometimes attacks only a particular part of the body, as one of the arms, the ſide of the head, &c. This cold is preceded by a heavy and ſleepy torpor, languor, and laſſitude, which we are partly to aſcribe to real weakneſs, and partly to mere lazineſs. To theſe ſymptoms ſucceed yawning and ſtretching; after which the cold comes on as above deſcribed, not unfrequently with a pain of the back and a troubleſome ſenſation of tenſion in the præcordia and hypochondria. To this ſucceed nauſea and vomiting; and the more genuine the diſeaſe, the more certainly does the vomiting come on, by which a great deal of tough mucous matter, and ſometimes bilious ſtuff or indigeſted food, is evacuated during the firſt paroxyſms. In ſome there is only a violent ſtraining to vomit, without bringing up any thing: ſometimes, inſtead of theſe ſymptoms, a diarrhœa occurs; and this chiefly in weak, phlegmatic, and aged people, or where an indigeſted mucous ſaburra has long remained in the primæ viæ.

When theſe ſymptoms have continued for an hour or two, the cold begins to go off, and is ſucceeded by a laſſitude, languor, and flaccidity of the whole body, but chiefly in the limbs, with an uneaſy ſoreneſs as if the parts had been bruiſed; excepting in thoſe caſes where the nauſea continues for a longer time. After this languor a heat comes on, the increaſe of which is generally ſlow, but ſometimes otherwiſe, with pain of the head, thirſt, and bitterneſs in the mouth. The pulſe is quick and unequal; ſometimes beating 130 ſtrokes in a minute. As ſoon as this heat hath abated, a little moiſture or ſweat is obſerved to break forth; not always indeed in the firſt, but always in the ſucceeding paroxyſms,

and the urine lets fall a quantity of lateritious ſediment. The whole paroxyſm is ſcarce ever over in leſs than ſix hours; more frequently eight, and in violent caſes extends to twelve hours; but that which exceeds twelve hours is to be reckoned a ſpurious kind, and approaching to the nature of continued fever. All theſe ſymptoms, however, are repeated every third day, in ſuch a manner that the patient is quite free from fever for at leaſt twenty-four hours. The paroxyſms return much about the ſame time, though ſometimes a little ſooner or later.

2. *Cauſes of this diſeaſe and perſons ſubject to it.*] The genuine tertian attacks men rather than women, young people rather than old; the latter being more ſubject to anomalous tertians. It likewiſe ſeizes the luſty and active, rather than the lazy and indolent. Thoſe, however, who are apt to nauſeate their meat, fall eaſily into a tertian fever. The cauſe, according to Dr. Cullen, is the miaſma of marſhes, and that only. Other phyſicians have taken in many more cauſes, almoſt every thing indeed which debilitates the body: but the doctor denies that any of theſe, though they may diſpoſe the body for receiving the diſeaſe, or may augment it, can by any means produce it without the concurrence of the marſh miaſma; and it cannot be denied, that it is a diſeaſe almoſt peculiar to marſhy ſituations. Thus we find it very frequent in the fenny countries of Britain, although in other parts of this iſland it may be conſidered as a rare diſeaſe.

3. *Prognoſis.*] The genuine ſimple tertian, unleſs improper medicines be adminiſtered, is generally very eaſily cured; nay, the vulgar reckon it of ſuch a ſalutary nature, that after it they imagine a perſon becomes more ſtrong and healthy than before. Hippocrates has obſerved, that theſe fevers terminate of their own accord after ſeven or nine paroxyſms.—Juncker tells us, that it frequently terminates before the ſeventh paroxyſm, but rarely before the fourth. He alſo denies that any thing critical is to be obſerved in its going off; but in this he differs from Vogel, who tells us, that the urine, for ſome days after the fever is quite gone off, appears ſlimy, and lets fall much ſediment. The latter alſo aſſerts, that beſides the common criſis by ſweat and urine, the tertian hath one peculiar to itſelf, namely, dry ſcabby ulcers breaking out upon the lips. Theſe ſometimes appear about the third or fourth paroxyſm; and then we may venture to foretel that the diſeaſe will go off ſpontaneouſly after the ſeventh. But though the diſeaſe be never dangerous, in cold climates at leaſt, when properly treated; yet the improper uſe of hot and ſtimulating medicines may change it into a continued fever, more or leſs dangerous according to the quantity of medicines taken and the conſtitution of the patient; in which caſe the progreſs muſt be regulated by the particular ſymptoms which occur. In warm climates, however, the tertian fever may be conſidered as a much

more dangerous diſeaſe; and unleſs the moſt powerful remedies be employed, the patient is in danger of falling a victim to every paroxyſm.

A variety of theories have been propoſed for explaining the phenomena of this affection; but every thing ſaid upon the ſubject is highly unſatisfactory. For although it be now almoſt univerſally admitted, that this fever does ariſe from the effluvia of marſhes, yet in what manner the action of thoſe effluvia induces fever, and particularly why this fever returns in regular paroxyſms, are queſtions with regard to which we are ſtill totally in the dark. Dr. Cullen, with much ingenuity, attempted to prove, that the remote cauſes of this, as well as of other fevers, operated by inducing a ſtate of debility; that this debility giving riſe to ſpaſm, induces increaſed action, from which the phenomena are to be explained. But this theory is liable to no leſs numerous and inſurmountable objections than the exploded hypotheſes which had before been propoſed by others. For it is an undeniable truth, that debility often exiſts, even to the higheſt imaginable degree, without any fever; nay, that when fever has taken place, the debility is often much greater after it is entirely gone than at any period during its courſe. When ſpaſm and increaſed action do take place, we have no reaſon to view them in any other light than merely as ſymptoms of the diſeaſe; and while they are often abſent in this affection, they frequently occur in others where the ſickneſs, anxiety, and other characteriſing ſymptoms of fever are entirely abſent: and, upon the whole, a probable or rational theory of intermittents, as well as other fevers, ſtill remains to be diſcovered.

4. *Cure.*] The treatment of all genuine intermittents, whether *tertians*, quotidians, or quartans, being almoſt preciſely the ſame, the general method of cure applicable to them all may be here given, to which it will be eaſy to refer when we come to deſcribe the others.

In treating intermittent fevers, phyſicians have formed indications of cure according to their different theories. The followers of Boerhaave, Stahl, &c. who imagined that the diſeaſe proceeded from a lentor or other diſorder in the blood, always thought it neceſſary to correct and evacuate theſe peccant humours by emetics and purgatives before they attempted to ſtop the diſeaſe by the Peruvian bark or any other medicine. The bark, indeed, among ſome of them, ſeems to be held in very little eſtimation; ſince Vogel affirms, that this medicine, inſtead of deſerving to have the preference of all other febrifuge medicines, ought rather to be ranked among the loweſt of the whole; and for this reaſon he aſcribes the cures, ſaid to be obtained by the uſe of the Peruvian bark, entirely to nature.

According to Dr. Cullen, the indications of cure in intermitting fevers may be reduced to the following.

1. In the time of intermiſſion, to prevent the return of the paroxyſms.

2. In the time of paroxyſms, to conduct thoſe in ſuch a manner, as to obtain a final ſolution of the diſeaſe.

3. To take off certain circumſtances which might prevent the fulfilling of the two firſt indications.

The firſt indication may be anſwered in two ways: 1. By increaſing the action of the heart and arteries ſome time before the period of acceſſion, and ſupporting that increaſed action till the period of acceſſion be over, and thus to prevent the recurrence of that atony and ſpaſm of the extreme veſſels, which he thinks give occaſion to the recurrence of paroxyſms. 2. By ſupporting the tone of the veſſels, and thereby preventing atony and the conſequent ſpaſm, without increaſing the action of the heart and arteries, the recurrence of paroxyſms may be prevented.

The action of the heart and arteries may be increaſed, 1. By various ſtimulant remedies internally given or externally applied, and that without exciting ſweat. 2. By the ſame remedies, or others, managed in ſuch a manner as to excite ſweating, and to ſupport that ſweating till the period of acceſſion be for ſome time paſt. 3. By emetics, ſupporting for the ſame time the tone and action of the extreme veſſels.

The tone of the extreme veſſels may be ſupported without increaſing the action of the heart and arteries, by various tonic medicines; as, 1. Aſtringents alone. 2. Bitters alone. 3. Aſtringents and bitters conjoined. 4. Aſtringents and aromatics conjoined. 5. Certain metallic tonics; and, 6. Opiates. A good deal of exerciſe, and as full a diet as the condition of the patient's appetite and digeſtion allow of, will be proper during the time of intermiſſion, and may be conſidered as belonging to this head. Although many particulars in this plan of cure are deduced from Dr. Cullen's theory, yet there can be no doubt that the object chiefly to be aimed at is to employ ſuch remedies during the intermiſſions as will prevent a recurrence of the paroxyſm. Of all the remedies hitherto employed with this intention, the moſt celebrated, perhaps the moſt certainly effectual, is the Peruvian bark; or to ſpeak more properly, the bark of the *Cinchona officinalis* of Linnæus. But it muſt be obſerved, that good effects are only to be expected from this medicine when given in ſubſtance and in large quantity; and for its uſe the following inſtructions have been given.

1. The bark may with ſafety be employed at any period of intermitting fevers, provided that at the ſame time there be neither a phlogiſtic diatheſis prevailing in the ſyſtem, nor any conſiderable or fixed congeſtion preſent in the abdominal viſcera.

2. The proper time for exhibiting the bark in intermittent fevers is during the time of intermiſſion, and it is to be abſtained from in the time of paroxyſms.

3. In the caſe of genuine intermittents, while a due quantity of bark is employed, the exhibition of it ought to be brought as near to the time of acceſſion as the condition of the patient's ſtomach will allow.

4. In all caſes of intermittents, it is not ſufficient that the recurrence of paroxyſms be ſtopped for once by the uſe of the bark; a relapſe is commonly to be expected, and it ſhould be prevented by the exhibition of the bark repeated at proper intervals.

The advantage of adminiſtering the bark as early as poſſible, was fully aſcertained by Dr. Lind in the years 1765, 66, and 67, during an uncommon prevalence of intermittents. When the diſeaſe was ſtopped by the bark immediately after the firſt or ſecond fit, which was the caſe with 200 of the Doctor's patients as well as himſelf, neither a jaundice nor dropſy enſued; whereas, when the bark could not be adminiſtered, on account of the imperfect remiſſion of the fever, or when the patient had neglected to take it, either a dropſy, jaundice, or conſtant headach, were the certain conſequences; and the violence of the diſeaſe was in proportion to the number of the preceding fits, or to the continuance of the fever. By every paroxyſm the dropſical ſwellings were viſibly increaſed, and the colour of the ſkin rendered of a deeper yellow. When the fever continued a few days without remiſſion, the belly and legs generally ſwelled; a violent headach, likewiſe, and vertigo, for the moſt part diſtreſſed the patient; ſo that ſome, even after the fever had left them, were not able to walk acroſs their chamber for a fortnight or three weeks. When the returns of the fever were regular and even, but ſlight, four or five fits of a ſimple tertian were ſometimes followed by the moſt dangerous ſymptoms; eſpecially in the year 1765, when the fevers raged with great violence. If, as frequently happened, a dropſical patient relapſed into the ague, there was an abſolute neceſſity of putting an immediate ſtop to it by the bark; and in upwards of 70 ſuch patients, Dr. Lind obſerved the moſt beneficial effects to accrue from this practice. He never preſcribed the bark until the patient was free from all ſymptoms of the fever; but in that caſe, without regard to a cough, or any other chronical indiſpoſition, he ordered it to be given in large doſes.

The bark has been obſerved to fail in removing intermittents, from not continuing the uſe of it for a ſufficient length of time, from adminiſtering it in too ſmall a doſe, or from giving it in an improper form. It is a prevailing opinion, that an ounce, or an ounce and a half, of the bark, taken during one intermiſſion, is ſufficient to prevent the return of another paroxyſm. But this is not always the caſe; for a ſevere fit will often attack a patient

who has taken such a quantity. When this happens, the patient ought to persevere during the following intermissions, with an increase of the dose, till five or six ounces at least have been taken. The medicine also ought not to be omitted as soon as one fit is stopped, but should be continued in a smaller dose, and after longer intervals for at least ten days or a fortnight. Even for several months after the disease is entirely removed, it would be advisable to take a little bark occasionally in damp weather, or during an easterly wind, to prevent a relapse. Where the intervals between the fits are short, as in quotidians and double tertians, from one to two drachms of it ought to be taken every two or three hours.

The form in which this medicine is administered is of some consequence. Mucilages and syrups have been recommended to conceal the taste of it; but, from various experiments, Dr. Lind found nothing more effectual for this purpose than small beer or milk, especially the latter. A drachm of bark mixed with two ounces of milk, and quickly drank, may easily be taken by a person of the most delicate taste, and by washing the mouth afterwards with milk there will not remain the least flavour of the bark; but if the mixture be not drank immediately, the bark will impart a bitter taste to the milk. This medicine is commonly given in electuaries or boluses; but Dr. Lind observes, that in these forms it proves much less efficacious than when administered in juleps or draughts, with the plentiful addition of wine or spirits. He has remarked, that six drachms of powdered bark, given in a julep, consisting of one fourth or one third of brandy, is as effectual as an ounce of the powder in the form of electuary, and proves less disagreeable to the stomach. For patients unaccustomed to wine or spirits, each draught should be warmed with spiritus ammoniæ comp. or tinct. myrrh. by both of which the efficacy of the bark is increased. Dr. Lind is also fully convinced that wine or spirits improve the virtues of the bark much more than vitriolic acid, tinct. rosæ, or such other medicines as have been recommended by different physicians.

For those who nauseate the bark from a weakness of the stomach or other causes, he advises it to be given in clysters, in which form it is as efficacious as when taken by the mouth. For this purpose the extract is most proper, with the addition of a sufficient quantity of the tinctura opii in order to its being longer retained. For children labouring under intermitting fevers, Dr. Lind orders the spine of the back to be anointed, at the approach of the fit, with a liniment composed of equal parts of tinctura opii and linimentum sapon. which has often prevented it. If this should not produce the desired effect, he informs us, that two or three teaspoonfuls of *syrup. e mecon.* given in the hot fit, will generally mitigate the symptoms. But for the entire removal of the disease, after purging with magnesia, he prescribes a drachm of the *extract.*

cinchonæ, with a few drops of *tinctura opii* in a clyſter, to be repeated every three hours for a child of about a year old. When the ſtomach is oppreſſed with phlegm, the magneſia frequently occaſions vomiting, which ſhould be promoted with warm water. The conſtant heavineſs of the head occaſioned by thoſe fevers in ſuch tender conſtitutions is beſt relieved by the application of a bliſter to the back.

The bark has alſo proved effectual for the cure of intermittents in children, even when externally applied, by putting the powder of it into a quilted waiſtcoat. Of its efficacy in this way ſeveral inſtances are related by Dr. Samuel Pye, in the ſecond volume of Medical Obſervations and Inquiries. In ſhort, ſo effectual was the bark found in removing theſe fevers when properly applied, that of between four and five hundred afflicted with them in the year 1765, Dr. Lind loſt only two, neither of whom had taken this medicine.

In all theſe fevers, a vomit was adminiſtered whenever the patient complained of a ſickneſs and reaching to vomit, or was ſeized with a ſpontaneous vomiting; and the bark was never given till the ſickneſs was removed, or a purgative taken to clear more perfectly the whole alimentary canal. Dr. Fordyce directs the following emetics:

(No. 1.) ℞ Pulv. Ipecac. gr. vi. ad xij.
Antim. Tart. gr. i. Ft. Pul. Emet.
Vel, Ft. cum Syr. Scilit. q. ſ. Bolus. Emet.
Vel,
(No. 2.) ℞ Tinct. Ipecac. ℥ß. ad ℥j.
Antim. Tart. gr. j. Ft. Hauſt. Emet.

As a purgative, the following is not improper.

(No. 3.) ℞ Infuſ. Sennæ ſim. ℥v.
Kali Tartar. ℥j.
Antim. Tartar. gr. ij. ſolve ut fiat Miſt. cathart.
Sumantur coch. iv. tertia quaq. hora donec venter rite ſolutus fuerit. Vel,

(No. 4.) ℞ Infuſ. Sen. ℥jß.
P. Rad. Rhab. ℈j. ad ʒß.
Syr. Roſæ } a a ʒij. m.
Træ Sennæ }

Capt. Intermiſſ. Temp. ita ut Purgatio ex toto ceſſaverit ante Paroxyſmi Acceſſionem.

The following warm purgatives are ſometimes directed by Dr. Saunders at Guy's Hoſpital:

(No. 5.) ℞ Pulv. Aloet. cum Guaiac. ʒij.
Pulv. Antimonial. ʒj.
Syrupi ſimp. q. ſ. Fiant pil. xvi. cap. ij. hora ſomni.

(No. 6.) ℞ Vini Aloës ℥iiſs.

Sp. Ammon. Comp. ʒfs. M. cap. coch. j. ex quovis vehiculo.

(No. 7.) ℞ Kali vitriolat.
Pulv. Rhabarb. ſing. gr. xv.
Pulv. Aromat. gr. v. M. f. Pulv. purg. mane ſumend.

In thoſe patients who were troubled with a cough, attended with a pain in the ſide affecting the breathing, when the pain was not relieved by warm fomentations, the balſamum anodynum, or by a bliſter, Dr. Lind generally ordered a few ounces of blood to be taken away, and endeavoured to ſtop the fever as ſoon as poſſible by the adminiſtration of the bark: having found that every return of the fever increaſed all ſuch pains. When the headach was very violent, and haraſſed the patient during the intermiſſions, the ſucceſs of the bark was rendered more complete by the application of a bliſter to the back.—A giddineſs of the head, which is the ſymptom moſt commonly remaining after even a ſlight intermitting fever, was generally relieved by volatiles, and the bark in wine. The former of theſe was adminiſtered in the following manner:

(No. 8.) ℞ Aq. Menth. Sativ. ʒvii.
Sal. cornu cervi ʒſs.
Syr. è Cort. Aurant. ʒi. M. f. julep. Cap. cochlear. ij. ſubinde.

If from the continuance of the fever the patient was diſtreſſed with flatulence, a diſtenſion of the abdomen, and a ſwelling of the legs, a ſpoonful of tinctura ſacra, with the addition of 30 drops of the Tinct. lavend. compoſ. was ordered to be taken every night. —A continuance of the bark, a change of air, and the cold bath, were often found requiſite to prevent a relapſe.

Such was the method of cure recommended by this experienced author, who alſo proved the efficacy and ſucceſs of opium in intermitting fevers. He informs us, that he has preſcribed an opiate to upwards of 300 patients labouring under this diſeaſe; and he obſerved, that, if taken during the intermiſſion, it had not the leaſt effect either in preventing or mitigating the ſucceeding paroxyſm: when given in the cold fit, it once or twice ſeemed to remove it; but when given half an hour after the commencement of the hot fit, it generally gave immediate relief.

(No. 9.) ℞ Tinct. Opii gutt. xx. ad xl.
Aquæ Menthæ ſativæ ʒiſs M.
Fiat Hauſt. anod.

When given in the hot fit, the effects of opium are as follow: 1. It ſhortens and abates the fit; and this with more certainty than an ounce of the bark is found to affect the diſeaſe. 2. It generally gives a ſenſible relief to the head, takes off the burning heat of the fever, and occaſions a profuſe ſweat. This ſweat is attended with an agreeable ſoftneſs of the ſkin, inſtead of the

burning ſenſation which affects patients ſweating in the hot fit, and is always much more copious than in thoſe who have not taken opium. 3. It often produces a ſoft and refreſhing ſleep to a patient tortured in the agonies of the fever, from which he awakes bathed in ſweat, and in a great meaſure free from all complaints.

The doctor has always obſerved, that the effects of opium are more uniform and conſtant in intermitting fevers than in any other diſeaſe, and are then more quick and ſenſible than thoſe of any other medicine. An opiate thus given ſoon after the commencement of the hot fit, by abating the violence and leſſening the duration of the fever, preſerves the conſtitution ſo entirely uninjured, that, ſince he uſed opium in agues, a dropſy or jaundice has ſeldom attacked any of his patients in thoſe diſeaſes. When opium did not immediately abate the ſymptoms of the fever, it never increaſed their violence. On the contrary, moſt patients reaped ſome benefit from an opiate given in the hot fit, and many of them bore a larger doſe at that time than they could at any other. The doctor aſſures us that even a delirium in a hot fit is not increaſed by opium, though opium will not remove it. Hence he thinks it probable, that many ſymptoms attending the fever are ſpaſmodic; but more eſpecially the head-ach. However, if the patient be delirious in the fit, the adminiſtration of the opiate ought to be delayed until he recovers his ſenſes, when it will be found greatly to relieve the weakneſs and faintneſs which commonly ſucceed the delirium. Dr. Lind is of opinion, that opium in this diſeaſe is the beſt preparative for the bark; as it not only produces a complete intermiſſion, in which caſe alone that remedy can be ſafely adminiſtered; but occaſions ſuch a ſalutary and copious evacuation by ſweat, as generally to render a much leſs quantity of bark requiſite. When the patient was coſtive, he commonly preſcribed the opiate thus:

(No. 10.) ℞ Vin. Aloës ℥ij
Tinct. opii gutt. xxx. ad l.
Miſce. f. Hauſt.

The bark was ordered immediately after the fit. By theſe means the paroxyſm is ſhortened, and the inteſtines are cleanſed, previous to the adminiſtration of the bark; as the opiate doth not prevent, but only ſomewhat retards the operation of the purgative. When a vomit is given immediately before the paroxyſm, the adminiſtration of the opiate ſhould be poſtponed till the hot fit is begun.

In the adminiſtration of Peruvian bark, care ſhould be taken that it be of a good quality. And different opinions have been entertained with reſpect to the choice, even where there is no reaſon to believe that it has been adulterated by the mixture of other articles. For a long time, the preference was given to

ſmall quilled pieces of a pale coloured bark: afterwards the *red* bark, which is generally in larger maſſes, of an apparently coarſer texture, and evidently of a more reſinous nature, was highly celebrated: and this again has been ſuperſeded at Guy's, and moſt other hoſpitals in London, by the *yellow* bark, which appears by experiment to poſſeſs more of the medicinal quality in a ſmaller compaſs, than any other ſpecies. Indeed, either of the two laſt, in caſes where they do not diſagree with the ſtomach or excite looſeneſs, are admitted by the moſt accurate obſervers to be more powerful in preventing the return of intermittents than the common bark. Whether the red bark be the product of a different ſpecies of the cinchona, or be obtained, as well as the pale quilled bark, from the cinchona officinalis, is not yet well aſcertained.

A ſpecies of cinchona, diſtinguiſhed by the title of *cinchona Jamaicenſis*, has been diſcovered in Jamaica and other iſlands in the Weſt Indies. A very accurate deſcription of it has been given by Dr. Wright of Jamaica in the Philoſophical Tranſactions of London. The bark of this ſpecies has alſo been recommended in the cure of intermittents.

The barks of various trees readily cultivated in Britain, particularly different ſpecies of the ſalix, the prunus, the fraxinus, and the quercus, have by ſome been repreſented as not leſs efficacious than the Peruvian bark. But we may ſafely venture to aſſert, that although ſeveral of them may poſſeſs ſome power in ſtopping intermittents, yet that none hitherto tried can be conſidered as in any degree approaching to the cinchona in point of efficacy.

But although the Peruvian bark be the beſt cure for intermittents hitherto diſcovered, yet while it can by no means be repreſented as the only cure, it is very certain that other remedies have in different caſes ſucceeded after the cinchona has failed. Cures have often been obtained by the uſe of different aromatics, bitters, and aſtringents. Many articles from the mineral kingdom alſo have been employed with advantage: and intermittents have unqueſtionably been in certain caſes ſtopped by different preparations of iron, zinc, copper, lead, and mercury. But of all the articles of this nature, arſenic has of late been the moſt celebrated. Arſenic is, on good grounds, conjectured to be the baſis of an article much employed in the cure of intermittents in ſome of the countries where they are moſt prevalent, and ſold under the title of the *taſteleſs ague drop*. The great ſucceſs attending the uſe of this article, led Dr. Fowler, an ingenious phyſician of Stafford, to examine it with particular attention. And in a treatiſe which he publiſhed, entitled, *Medical Reports on the effects of arſenic in the cure of agues*, he has given the following formula for an arſenical ſolution, which he has found very ſucceſsful in affections of this kind.

(No. 11.) ℞ Arſenici pulv. ſubtil.
Kali præparati ſing. gr. xvi.
Aquæ diſtill. ℥iv.

Theſe are to be digeſted together in a ſand heat till the arſenic is completely diſſolved.

This ſolution is given in doſes from three to twelve drops, varied according to the condition of the patient, and repeated two or three times a-day. And where the Peruvian bark has failed in ſtopping intermittents, it ſeems to be one of the moſt powerful remedies yet diſcovered. But after all remedies prove ineffectual, intermittents are often ſtopped by change of ſeaſon and of ſituation.

A *tartariſed arſenic*, propoſed by Mr. Sherwin, has been found to anſwer this purpoſe as well as any other; yet it is neceſſary, in the exhibition of this dangerous remedy, in every caſe and under every form, that the phyſician ſhould continually watch its effects on the ſyſtem, otherwiſe the moſt ſerious evils may occur to the patient.

But beſides the remedies employed in tertian fevers and other intermittents, with the view of preventing the return of paroxyſms, it is often alſo neceſſary to emply powerful articles with other intentions, particularly to mitigate and ſhorten the paroxyſm when preſent; to obviate urgent ſymptoms, eſpecially thoſe of an inflammatory and putrid nature; and to obtain a complete apyrexia or intermiſſion from fever after the paroxyſm has ceaſed. With theſe intentions, if the ſymptoms of ſtrength are great, bleeding will be uſeful, but above all *relaxants* muſt be employed.

(No. 12.) ℞ Aq. Menth. vulg. ℥jſs.
Tart. Vitr. ʒß. ad ℈ij. vel
Sal. Amm. ℈ij. ad ʒj. vel
Antim. Tart. gr. ¼ ad gr. ½
Aq. Menth. Piper. } a a ʒij. m.
Syr. Moror. }

Cap. quintâ vel ſextâ quâque horâ.

The emetics as above will likewiſe act in the ſame manner.

It ſometimes happens that a perfect intermiſſion being procured by theſe means, the diſeaſe leaves the patient. But if, notwithſtanding ſuch intermiſſion, the fever contiues, the fit is to be prevented by the following:

(No. 13.) ℞ Cort. Cinchon Opt. Subt. Pulv. gr. xv. ad ʒij.
Capt. e Cyath. Vin. generoſ. horæ quadrantis ad hor. iv. intervallo ita ut æger ſumat ʒ vi. ad minimum inter duos paroxyſmos.

As great a quantity is to be given at a time as the patient's ſtomach will bear; and the intervals between the doſes are to be as long as poſſible.

The bark is to be omitted during the time the ſubſequent paroxyſm ſhould have continued, and is then to be repeated in the ſame quantity and manner, eſpecially if any ſymptoms of the fit ſhould have recurred, provided generally that the paroxyſm has been greatly leſſened. The ſame meaſures are to be purſued in the third period: afterward the medicine is to be omitted for four or five days, and then returned to for 24 hours; and this is to be practiſed twice or thrice (at longer intervals each time).

If there be any ſymptoms of inflammation in the breaſt, they ſhould be removed before the exhibition of the bark.

Symptoms of bile in the blood-veſſels are not to be attended to any farther than as they render the intermiſſions imperfect.

If the bark has been given imprudently, viz. when the patient is ſtrong, and no perfect intermiſſion has taken place, we are to omit it till ſuch intermiſſion is procured by the above means; but even then it acts leſs powerfully than it would otherwiſe have done. If the bark purges, from five to ten drops of laudanum may be given three or four times a-day. If the patient continues long bound, a ſtool may be procured by a ſmall doſe of rhubarb, or aloes. If the ſtomach will not bear the powder, the decoction or extract may be uſed; or it may be applied in a clyſter, or even externally, though theſe methods are never ſo ſure of ſucceſs.

If the diſeaſe attacks a weak patient, or has continued till a ſtrong habit is much weakened, the bark is to be given at the time of the beſt remiſſion; it often brings on a ſevere but regular fit, and upon continuing its uſe the fever leaves the patient.

The following are directed by Dr. Fordyce to counteract the cold fit at the time of its coming on.

(No. 14.) ℞ Spirit. Cinnam. ℥j. ad ℥ij.
Aq. Menth. vulg. ℥j.
Antim. Tart. gr. ß. ad gr. jß.
Tinct. Opii gtt. xx. ad xl.
Syr. Croci ℥ij. m. fiat Hauſt.

(No. 15.) ℞ Aq. Menth. vulg. ℥ij.
Sal. Alk. Volat. m. gr. xv.
Pulv. Ipec. gr. ij.
Træ Opii gtt. l.
Syr. Simpl. ℥j. m. fiat Hauſt.

Cap. ante paroxyſmi acceſſionem; æger quoque in lecto detineatur.

Having thus minutely deſcribed the general treatment of intermittents, we ſhall ſpeak of the varieties and irregularities which occur, and to which the foregoing remedies are to be adapted according to circumſtances.

The *Irregular* or *Spurious* TERTIAN.

Sp. I. var. 1. B.

Tertiana notha ſive ſpuria, *Sauv.* ſp. 2. *Sennert. Cleghorn. Hoffman.*

The characteriſtic marks of this fever are, that its paroxyſms laſt longer than twelve hours, and conſequently it inclines more to the quotidian fever than the former. Its paroxyſms have no ſtated hour of attacking. The cure, however, is preciſely the ſame with that above deſcribed, obſerving the proper cautions already mentioned with regard to the uſe of the bark.

We ſhall here inſert the following ſingular caſe of a tertian intermittent, attended with uncommon ſymptoms, publiſhed by Mr. Bradley in the Medical and Phyſical Journal.

"*Sarah Prieſt*, a young girl of fourteen years of age, and of an athletic conſtitution, and who had never menſtruated, was ſeized with the paroxyſm of a tertian ague, Jan. 14, 1795. The cold ſtage continued upwards of an hour, and was ſucceeded as uſual by a hot fit, which laſted rather more than two hours, and then ſubſided without any evacuation by the ſkin.

"Jan. 16. The paroxyſm returned to-day about the ſame time, but was ſomewhat longer in duration.

"17th. To-day, being the firſt time of ſeeing her, I found her labouring under conſiderable fever, pulſe quick, tongue white and ſomewhat parched, ſome pain in the head and loins, and a diſpoſition to naüſea and coſtiveneſs; to remove which, fifteen grains of the pulv. ipecac. with one grain of the tartar emetic were given, which puked her ſeveral times. After this one drachm of *Fordyce's prophylactic powder* was ordered, which procured four ſtools. Eight grains of *nitre* with the ſame quantity of *white ſugar*, were next preſcribed to be taken every three hours, along with three tableſpoonfuls of the *ſali e mixture*, eight ounces of which contained four ſcruples of the *kali*, with as much lemon-juice as was ſufficient to ſaturate the ſame.

"18th. The fit came on four hours earlier than uſual, and was ſimilar to the laſt in point of violence and duration, but yet terminated by no perſpiration. In other reſpects ſhe was the ſame as before.

"19th. Little alteration ſince yeſterday; the intermediate fever, however, appeared ſomewhat leſſened.

"20th. The paroxyſm came on half an hour ſooner than the laſt, and was of equal ſeverity and duration, and yet unſucceeded by any diſcharge from the ſkin. As the intermediate and febrile ſymptoms were now conſiderably abated, the following was ordered:

(No. 16.) ℞ Pulv. cinchonæ ʒiij.
Kali præp. ʒſs.
Sp. nuc. moſch. ʒſs.
Aq. fontis ʒvij. Miſce.

" Two tableſpoonfuls of this mixture were taken every three hours.

" 21ſt. Was better to-day than ſhe hitherto had been during the intervals of the fits, being now pretty cool without thirſt or pain, and her appetite was conſiderably better.

" 22d. This day ſhe had no return of paroxyſm, and in all other reſpects ſeemed very well. Had diſcontinued her mixture laſt night, after having only taken eight ounces of it, and ſhe could not be perſuaded to take it afterwards.

" 24th. At or about the time of the laſt fit, which was in the night, the patient, according to her own account, was ſeized with pain in the head, uneaſineſs and oppreſſion at the ſtomach, conſiderable thirſt and heat, but without rigors; theſe, on abating, were ſucceeded by ſleep, and a hæmorrhage, as was ſuppoſed from the mouth. Six hours afterwards petechiæ were diſcovered on the arms, ſhoulders, and upper part of the trunk, and even on the legs, but the ſpots on the laſt were ſmall and innumerable. On looking into the mouth, a number of petechiæ of a gangrenous aſpect appeared within the lips, on the inſide of the cheeks and fauces. Her pulſe was quick, but not weak, and ſhe had ſome thirſt, with liſtneſſneſs and proſtration of ſtrength. Had no ſickneſs or nauſea, and was regular as to ſtools, which exhibited no unnatural appearance. Bled none this day ſince ſhe awoke in the morning, but her ſaliva was now and then ſlightly tinged."

Mr. Bradley now ordered three large tableſpoonfuls of a ſtrong decoction of bark.

(No. 17.) ℞ Cort. Cinchonæ pulv. ʒvj.
Coque in Aquæ fontis ℥xij. ad ℥vij. adde
Tinct. Cinchonæ comp. ℥j. fiat decoctio.

Along with each doſe of this were taken twelve drops of *vitriol. acid. dilut.* Half a pint of red-port wine made into *negus*, and acidulated with lemon-juice, was alſo ordered to be taken in the courſe of the day; and a nouriſhing diet, ſuch as broths, jellies, &c. was alſo directed.

" 25th. Bled in the night as before, but without being ſenſible of any previous indiſpoſition. As the hæmorrhage happened in her ſleep, neither its acceſſion, duration, or violence, could be aſcertained. In other reſpects ſhe was as the day before.

" 26th. Had bled largely as uſual from the mouth, in the night, during ſleep. Her legs were now ſwelled, and livid, and the petechiæ were much increaſed, eſpecially on the face, ſhoulders, and breaſt. The ſpots within the mouth had alſo a more gangrenous aſpect, but the reſt of the mouth had an uncommonly pallid appearance. Her pulſe was about one hundred, and weak, and her thirſt was yet conſiderable, though her tongue was moiſt and clean. She was liſtleſs, low-ſpirited, and

free from pain, and was also regular as to stools, which were of a natural consistence, but somewhat more than usually offensive, and dark coloured.

" The strength of her mixture was increased from six drachms of the bark to one ounce, the same quantity of the decoction to be taken as before, along with fifteen drops of the elixir, instead of twelve. Her wine was also ordered to be increased to a pint a-day.

" 27th. Much the same as yesterday, and had bled as usual in the night, whilst asleep. Instead of the compound tincture of bark, an ounce of the tincture of *catechu* was added. Milk and rice were now taken along with her former diet.

" 28th. Bled as usual last night, and complained of great stiffness in her hams and knees, and her legs were much swelled, and more livid and œdematous. The petechiæ were more universal, and her breath offensive. She complained of some sickness, and was greatly dejected. She was delirious the fore-part of the night, but afterwards slept tolerably. Instead of the vitriolic, twelve drops of the muriatic acid were prescribed to be taken in the same manner as the former; and in the intervals of taking her medicine, lemon-juice in different vehicles was plentifully drunk.

" 29th. This day she went a few yards out of doors, and on her return was seized with rigors, and considerable pain in the back and lower extremities, especially the right leg, which now, in addition to lividness, put on symptoms of inflammation, and was greatly swelled. Two or three large *vibices* appeared in different parts of the body, one of which surrounded the right eye, and occupied the space of the *orbicularis* muscle. Her pulse was increased to one hundred and six, yet her thirst much the same; her petechiæ however bore rather a more favourable aspect, and she bled only about half the usual quantity in the night.

" 30th. Better in all respects, as the pain in the loins and legs had vanished; and the appearances of the latter, with regard to the colour and swelling, much more favourable. The petechiæ also were changing from a livid to a chocolate colour, and her pulse came down to ninety, and her urine was turbid and similar to new beer mixed with yeast. Had no hæmorrhage last night, and has been without stool for the two last days; but on ordering the *tinct. catechu* to be omitted, she had a motion the same evening. Her appetite now increased, and the same plan was ordered to be pursued.

" 31st. She continued in all respects to recover. The petechiæ were either daily dispersing or becoming fresher, and the swelling of her legs was considerably reduced. The lividness had nearly disappeared, notwithstanding which she bled a few drops in the night. Her pulse was now at eighty-seven, and as

she complained of being tired of her medicines, the doses were not only lessened to two tablespoonfuls of the mixture, and eight drops of the acid, but ordered to be taken only three or four times a-day. These she could only be persuaded to take two or three days further, but her pint of wine she daily continued taking for a week longer.

"On the 5th of February, scarcely a vestige of petechiæ was discernible, and she had been free from any further attacks of hæmorrhage, and in all other respects appeared well. She henceforth rapidly regained her former health, which she has continued to enjoy to the present time.

"This girl, previous to this complaint, had always enjoyed an uninterrupted state of health from her infancy, and had been accustomed to a good deal of bodily exercise, especially within doors. Her diet had usually consisted of milk, and sometimes malt liquor as a substitute, farinaceous, and occasionally animal food, partly fresh and partly salted. Though apparently of a sound constitution, and without any external mark of scrophula, yet her parents were deeply tainted with that disorder.

"After the first and second attack of hæmorrhage, some proper attendants were appointed to observe the time of accession, and every other circumstance, with regard to any subsequent bleeding that might ensue. The result of these observations was, that the third attack came on at two o'clock in the morning, after the patient had been unremittingly asleep for four hours, and although, previously, she had been somewhat restless, with apparently increased heat and flushing of the face, yet when the bleeding came on she appeared comfortable, still, and laid on her side. After bleeding about five and thirty mintues, *per stillicidium**, she awoke, and then it ceased. The fourth attack came on half an hour later than the preceding, and was ushered in by less restlessness and apparent heat. After bleeding nearly forty minutes it ceased, and she continued sleeping forwards for an hour, and then awoke and fell asleep a second time, but without having any further return of the hæmorrhage. On the fifth night, she was awoke at two o'clock, and kept from falling asleep again till half past three; and then yielding to the power of sleep, ten minutes afterwards the hæmorrhage returned, without any previous indications, and was more profuse than before, but of shorter duration, as it only continued about twenty-eight minutes, though the saliva for several hours afterwards was slightly tinged. With respect to the sixth attack of hæmorrhage, from the carelessness of the attendants no proper account can be given.

* The quantity of blood lost could not be ascertained. It was supposed about an ounce and a half at a time, therefore the bleeding must have been very slow.

" From a number of collated circumſtances, attendant both on the two firſt and ſubſequent hæmorrhages, I am of opinion that they return at nearly regular periods; for notwithſtanding on the fifth morning, the bleeding was later in its return, yet probably its procraſtination was lengthened by keeping her awake beyond the former periods of attack, for, about an hour previous to its acceſſion, it was with ſome difficulty ſhe was kept from ſleeping. This circumſtance, joined to the conſideration of the hæmorrhage always commencing during ſleep, may in ſome meaſure account for its procraſtination on the fifth morning.

" The urine throughout her diſorder was changeable, both in quantity and appearance. During the firſt and intermittent ſtage, it was in large quantity and of a natural colour, eſpecially after the paroxyſm, and depoſited a ſmall ſediment, partly flocculent and partly purulent; but during the intervals, was ſomewhat higher coloured, and generally without ſediment. In the latter ſtage it was generally paler than natural, and the ſettlement largely and ſolely flocculent. On the 30th, the day after catching cold, the urine however put on a conſiderable change, ſuch as is deſcribed in the narrative of that day.

" She never appeared to have any rigors from the cure of the intermittent fever to the 29th, being the day of catching cold, nor any increaſed heats in that interval, except thoſe already deſcribed as uſhering in the hæmorrhage; and as to perſpiration, not the leaſt was perceptible during her illneſs, but on the contrary the ſkin always felt hot and dry.

" The weather, for ſeveral months prior to the firſt acceſſion of this complaint, had been exceedingly changeable. In the autumn there was much rain, which continued into December; to this ſucceeded alternate froſts and thaws, with almoſt daily changes of the wind. A ſevere ſtorm of froſt and ſnow, at length ſet in the beginning of January, and with the exception of one or two intermiſſions of ſlight thaws, continued to the commencement of her diſorder.

" Newſolme, the place of her reſidence, is a ſmall village ſituated rather in a mountainous part of the country, on the middle of a declivity of conſiderable extent. It is expoſed much to the north and north-weſt winds, and I have thought its inhabitants unuſually ſubject to feveriſh complaints; and beſides I once met with another caſe of tertian in this place, happening to a girl of about the ſame age and temperament, and who had never menſtruated. The diſorder was idiopathic, and unattended with any anomalous ſymptoms. The paroxyſms returned at equal intervals, and were terminated by copious perſpiration, and eaſily gave way to the bark.

" During a practice of almoſt twenty years in this town and neighbourhood I never ſaw an intermittent as a primary affec-

tion, happening to a native of the place, excepting in theſe two caſes; yet, notwithſtanding this, many people formerly, who were in the yearly habit of repairing to the eaſtern part of this county as reapers, imported this diſorder on their return, and which generally continued with them throughout the winter, but either left them ſpontaneouſly on the return of warm weather, or eaſily yielded to the bark. Latterly, however, this complaint is far leſs frequently obſerved than formerly, a circumſtance ariſing either from the harveſts being ſomewhat earlier, or what is more probable, the country being more cleared and better drained.

"A great proportion of theſe intermittents were tertian, and the unhappy ſufferers labouring under them generally were taking different remedies or noſtrums throughout the winter, and at the ſame time imprudently expoſing themſelves to the cold. For inſtance, the bark they would take for three or four days, till imagining themſelves well, they then would generally diſcontinue its uſe, and conſequently incur a relapſe, againſt which this remedy, or ſome other, was again had recourſe to, with uſually no better ſucceſs than before. Thus were thoſe unhappy people haraſſed throughout the winter; and even on the return of warm weather, were with more difficulty cured than thoſe whoſe complaint had continued uninterruptedly throughout the winter, and for which no remedies had been taken; and beſides, I have thought that affections of the liver, dropſies, &c. were more apt to ſucceed to the former claſs of patients that the latter."

The *Double* TERTIAN. Sp. I. var. 2. C.

Tertiana Duplex, *Sauv.* ſp. 13. *Vog.* G. 12. *Sennert. Cleghorn.* Duplicata, *Lin.* 18.

The double tertian comes on every day; but differs from the quotidian, in ſo far, that paroxyſms do not anſwer to each other ſingly, but alternately. The firſt day, for inſtance, the fit will come on in the forenoon, the third in the forenoon, and the fourth in the afternoon.

Of theſe fevers we ſhall give the following deſcription from Cleghorn's treatiſe on the diſeaſes of Minorca: "They are called *double tertian* when there are two fits and two intervals within the time of each period. But commonly there is ſome difference between the two fits, either in reſpect of the hour they come at, the time of their duration, or the nature and violence of their concomitant ſymptoms. Some double tertians begin in this manner.—On the evening of Monday, for example, a ſlight fit comes on, and goes off early next morning; but on Tueſday, towards the middle of the day, a more ſevere paroxyſm begins, and continues till night. Then there is an interval to Wedneſday evening, when a ſlight fit commences a new period of the fever, which proceeds in the ſame manner as the firſt; ſo that (accord-

ing to the way physicians calculate the days of diseases, by beginning to reckon from the first hour of their invasion), both paroxysms happen on the odd days, while the greatest part of the even days is calm and undisturbed. But in most turbulent tertians the patient has a fit every day of the disease; the severe ones commonly appearing at noon upon the odd days, the slight one towards evening on the even days; though sometimes the worst of the two fits happen on the even days.

"There is a tertian fever sometimes to be met with, during each period of which there are three different fits, and as many intervals. For example, towards Monday noon the patient is seized with a paroxysm, which declines about five or six o'clock the same evening: a few hours after, another fit begins, and continues till morning: from which time there is an interval till Tuesday evening, when a third fit comes on, and lasts most part of the night. On Wednesday there are again two paroxysms, as on Monday and on Thursday, like that of Tuesday; and thus the fever goes on with a double fit on each of the odd days, and a single fit on the even days.

"In double tertians, that interval is the most considerable which follows the severe fit; for the slight fit oftener ends in the remission than intermission, and frequently lingers till the other approaches: hence it is, that the night preceding the vehement fit is much more restless than that which comes after it, as has been observed by Hippocrates. In double tertians, the vehement fit often comes on a little earlier in each period, while the slight fit returns at the same hour, or perhaps later and later every other day; so that the motions of one have no influence on those of the other; from whence it appears, that each of these fits hath its own proper independent causes."

Duplicated TERTIAN. Sp. I. var. 2. D.

Tertiana duplicata, *Sauv.* sp. 14. *Jones. River.*

This hath two fits on the same day, with an intermediate day on which there are none. This also does not differ in any remarkable particular from those already described.

The *Triple* TERTIAN. Sp. I. var. 2. E.

Tertiana triplex, *Sauv.* sp. 15. *Cleghorn.*

Semitertiana, *Hoffman.*

Semitertiana primi ordinis, *Spig.*

This differs from the former in having a single and double fit alternately: thus, for instance, if there are two fits the first day, there is only one the second, two the third, one the fourth, &c. Its cure the same as before.

The *Semi*-TERTIAN. Sp. I. var. E.

Hemitritæus, *Celſ.*
Semitertiana, *Cleghorn.*
Semitertiana ſecundi ordinis, *Spig.*
Amphimerina hemitritæus, *Sauv.* ſp. 8.
Amphimerina pſeudo hemitritæus, *Sauv.* ſp. 9.

The ſemitertian is deſcribed by Dr. Cullen as having only an evident *remiſſion* between its paroxyſms; more remarkable between the odd and even day, but leſs ſo between the even and odd one. For this reaſon, he adds, that poſſibly ſome ſemitertians ought rather to be claſſed among the remittents; and owns that it is difficult to ſettle the boundaries between them. But Cleghorn, whom he quotes, deſcribes it in the following manner: "A fit begins on Monday noon, for example, and goes off the ſame night. On Tueſday afternoon a ſecond fit comes on, and gradually increaſes till Wedneſday night, when it terminates. On Thurſday morning there is ſuch another interval as happened on Tueſday morning. But on Thurſday afternoon another long fit like the preceding commences; and returning regularly every other day, leaves only a ſhort interval of ten or twelve hours during the eight-and-forty.

Concerning the cure of theſe fevers, Dr. Cullen obſerves, that though no entire apyrexia occurs, the bark may be given during the intermiſſions; and it ſhould be given though the remiſſions be inconſiderable; if, from the known nature of the epidemic, intermiſſions or conſiderable intermiſſions are not to be expected, and that great danger is apprehended from repeated exacerbations.

The *Sleepy* TERTIAN. Sp. I. var. 3. G.

Tertiana carotica, *Sauv.* ſp. 10. *Werhoſf.*
Tertiana hemiplegica, *Sauv.* ſp. 20. *Werhoſf.*
Quotidiana ſoporoſa, *Sauv.* ſp. 8. *Car. Piſ.*
Febris caput impetens, *Sydenham*, Ep. ad R. Brady.

This, according to Vogel, is a moſt dangerous ſpecies, and very commonly fatal; for which reaſon he ranks it among thoſe intermittents which he calls *malignant*. Sometimes he tells us the alarming ſymptom of a ſleepineſs comes on, not at the beginning of the diſeaſe, but will unexpectedly occur during the third, fourth, fifth, or ſixth paroxyſm. It commonly begins with the cold fit, and continues during the whole time of the paroxyſm, and, becoming ſtronger at every ſucceeding one, at laſt terminates in a mortal apoplexy. Sometimes fevers of this kind rage epidemically. Vogel relates, that he ſaw a ſimple tertian changed into one of theſe dangerous fevers. The patient was a woman of a delicate conſtitution, and the ſymptoms appeared in conſequence of her being put in a violent paſſion: however, it occurred but once, and ſhe recovered. Hoffman mentions a carus in a double tertian

occurring seven times without proving mortal: though Vogel says, that the powers of nature are very seldom sufficient to conquer the disease.

In 1678, Dr. Sydenham tells us that intermittents raged epidemically in London, where none had appeared before from 1664. Of them "it is to be noted (says he), that though quartans were more frequent formerly, yet now tertians or quotidians were most common, unless the latter be entitled double tertians; and likewise, that though these tertians sometimes began with chillness and shivering, which were succeeded first by heat, and soon after by sweat, and ended at length in a perfect intermission, returning again after a fixed time, yet they did not keep this order after the third or fourth fit, especially if the patient was confined to his bed and used hot cardiacs, which increase the disease. But afterwards this fever became so unusually violent, that only a remission happened in the place of an intermission; and approaching every day nearer the species of continued fever, it seized the head, and proved fatal to abundance of persons."

From this description of Sydenham's we may have an idea of the nature of the disease. As to its cure, he strongly recommends the bark; telling us, that, even in the *most continued* kind of intermittents, "the nearer the intermittent approaches to a continued fever, either spontaneously, or from using too hot a regimen, so much the more necessary it is to exhibit a larger quantity of bark;" and that he took advantage of a remission though ever so small.

The *Spasmodic* or *Convulsive* TERTIAN. Sp. I. var. 3. H.
Tertiana asthmatica, *Sauv.* sp. 6. *Bonet.*
Tertiana hysterica, *Sauv.* sp. 8. *Wedel.* A. N. C. Dec. I. A. II. obs. 193.
Hysteria febricosa, *Sauv.* G. 135. sp. 8. A. N. C. Dec. I. Ann. II.
Tertiana epileptica, *Sauv.* sp. 16. *Caulder. Lautter.*
Quotidiana epileptica, *Sauv.* sp. 3. Edinb. Essays, vol. 5. art. 49.
Ecclampsia febricosa, *Sauv.* G. 133. sp. 17.
Epilepsia febricosa, *Sauv.* G. 134. sp. 9.
Tertiana tetanodes *Medici* Beobacht I. Band.
Tetanus febricosus, *Sauv.* G. 122. sp. 10. *Stork*, Ann. Med. II.

Tertians of this kind occur with very different symptoms from those of the true ones, and sometimes even with those which are very extraordinary. In some they are attended with symptoms of asthma, in others with those of hysterics, in others with convulsions. Where the symptoms of asthma occur, the disease must be treated with diuretics and anti-spasmodics joined with the bark. In the hysteric asthma the fit comes on with cold, yawning, cardialgia, terror, and dejection of mind. The disease is to

be removed by mild aperients and antihyſterics joined with the bark.

Of the convulſive tertian we have a moſt remarkable inſtance in the Edinburgh Medical Eſſays, vol. V. The patient was a farmer's ſon about 26 years of age, of a ſtrong plethoric habit of body. He had laboured under an ague half a year, and had taken a great deal of bark. While he was telling his caſe to the ſurgeon (Mr. Baine of Pembroke), he was ſuddenly taken with a violent ſtamping of his feet; and the convulſions gradually aſcended from the ſoles of his feet to his legs, thighs, belly, back, and ſhoulders. His head was then moſt violently convulſed, with a total deprivation of ſpeech; but he had a moſt diſmal vociferation, that might have been heard at a conſiderable diſtance, his abdomen and thorax working and heaving violently and unuſually in the mean time. This fit having laſted half an hour, a profuſe ſweat broke out over all his body, which relieved him; and he then became capable of anſwering ſuch queſtions as were put. Theſe extraordinary fits, he ſaid, had been occaſioned by a fright, and his neighbours had concluded he was bewitched. They returned ſometimes twice a-day, and always at the times the ague uſed to return. During the paroxyſm his pulſe was very high and quick, his face much inflamed, and his eyes ready to ſtart out of his head. After the fit was over, he complained of a moſt torturing pain of the bowels. His tongue was generally moiſt, and he had a ſuppreſſion of urine.—This diſeaſe, however, was totally ſubdued by the uſe of the bark, mercurials, antiſpaſmodics, opiates, and ſaline draughts.

The *Eruptive* TERTIAN. Sp. I. var. 3. I.

Tertiana petechialis, *Sauv.* ſp. 4. *Donat. Lautter.*

Tertiana ſcorbutica, *Wedel.* A. N. C. Dec. I. A. II. obſ. 193.

Tertiana urticata, *Sauv.* ſp. 22. *Planchon.* Journ. de Med. 1765. *Cleghorn.*

Tertiana miliaris, *Sauv.* ſp. 21. Walthier.

This ſpecies of tertian is accompanied with red or livid blotches on the ſkin, or an eruption like that occaſioned by the ſtinging of nettles. In the latter caſe Dr. Cleghorn ſays the diſeaſe is very dangerous; and as the former indicates an incipient diſſolution and putrefaction of the blood, it may alſo be reckoned of very dangerous tendency.

The *Inflammatory* TERTIAN. Sp. I. var. 3. K.

Tertiana pleuritica, *Sauv.* ſp. 4. *Valeſ. Lautt.*

Pleuritis periodica, *Sauv.* G. 103. ſp. 14.

Tertiana arthritica, *Sauv.* ſp. 5. *Morton. Lautt.*

Sauvages informs us, that he has ſeen a true and genuine

pleurisy having all the pathognomic signs of the disease, but assuming the form of an intermittent; that is, the patient is one day affected with the pleurisy, and the next seemingly in perfect health. He also tells us, that in the month of May, 1760, a tertian raged epidemically, which after the third fit imitated a pleurisy, the pain of the side and difficulty of breathing coming regularly on, and the fever from an intermittent becoming a remittent; the blood had also the same appearance with that of pleuritic persons, and the distemper yielded to bleeding and gentle cathartics.—Morton also informs us, that he has observed similar disorders an hundred times over, which were always certainly and safely cured by the Peruvian bark.

The TERTIAN *complicated* with other *Disorders*. Sp. I. var. 4.
Tertiana scorbutica, *Sauv.* sp. 9. *Etmuller. Timæus.*
Tertiana syphilitica, *Sauv.* sp. 17. *Deidier.*
Tertiana verminosa, *Sauv.* sp. 18. *Stisser.* in Act. Helmstad. *Lanscis.* de noxis palud. *Pringle. Ramazzini. Van den Bosch.* de const. vermin.

The scorbutic tertian, according to Sauvages, is exceedingly anomalous, its periods being sometimes much anticipated, and sometimes much postponed. It is exceedingly obstinate, and will return if the body be not cleared of its scorbutic taint. The patient is affected with lancinating pains of a wandering nature. The urine lets fall a dusky red sediment, or a thick branny matter is copiously scattered up and down in it, seemingly tinged with blood. The usual symptoms of scurvy, viz. livid spots, and rotten fetid gums, also frequently occur. For this the Peruvian bark is very useful, both as a febrifuge and antiscorbutic.

A tertian accompanied with worms is taken notice of by Sir John Pringle in his treatise on the diseases of the army. The worms, he tells us, were of the round kind; and though we are by no means to reckon them the cause of the fever, they never failed to make it worse, occasioning obstinate gripings or sickness at stomach. In these cases stitches were frequent; but, being flatulent, were not often relieved by bleeding. The worms were discharged by vomiting as well as by stool. For discharging these worms, he commonly gave the following:

(No. 18.) ℞ Pulv. rad. rhab. ʒss.
Calomel. gr. xij. m. f.

without observing any inconvenience from such a large dose of mercury. Anthelmintics, which act slowly, had little chance of doing good; for though worms will sometimes lie long in the bowels without giving much uneasiness to a person otherwise well, yet in a fever, especially one of a putrid kind (to which his intermittents always seemed to incline), the worms being disturbed by the increase of heat, and the corruption of the humours in the

primæ viæ, begin to move about, and ſtruggle to get out. Lanciſius, who makes this remark, adds, that upon opening the bodies of ſome who had died at Rome of fevers of this kind, wounds were found in the inteſtines made by the biting of the worms; nay that ſome of them had even pierced through the coats of the guts, and lay in the cavity of the abdomen. Pringle never had any inſtance of this; but knew many caſes in which the worms eſcaped by the patient's mouth, though there had been no previous retching to bring them up. One ſoldier was thrown into violent convulſions, but was cured by the above-mentioned powder.

The TERTIAN *varied* from its *Origin*. Sp. I. var. 5.
Tertiana accidentalis, *Sauv.* ſp. 12. *Sydenham.*
Tertiana a ſcabie, *Sauv.* ſp. 12. *Juncker*, tab. 80. *Hoffman*, II. p. 12.

The exiſtence of fevers of this kind, as we have already obſerved, is denied by Dr. Cullen; the accidental fever of Sauvages was ſaid to ariſe from any ſlight error in the non-naturals, and conſequently was very eaſily cured. That which aroſe from the repulſion of the itch, was cured as ſoon as the eruption returned.

The TERTIAN with only a *remiſſion* between the fits. Sp. II.
Tritæophya, *Sauv.* Gen. 85. *Sag.* p. 695.
Tritæus, *Lin.* 21.
Hemitritæa, *Lin.* 23.
Tertianæ remittentes et continuæ Auctorum.
Tertianæ ſubintrantes, proportionatæ, ſubcontinuæ, *Torti.*
Tertiana ſubcontinua, *Sauv.* ſp. 19.
Quotidiana deceptiva, *Sauv.* ſp. 2.
Amphimerina ſemiquintana, *Sauv.* ſp. 24.
Tritæophya deceptiva, *Sauv.* ſp. 10.
Cauſus *Hippocratis.*
Tritæophya cauſus, *Sauv.* ſp. 2.
Febris ardens *Boerhaavii*, aph. 738?
Tertiana pernicioſa, quæ ſimulata tertiani circuitus effigie lethalis, et mille accidentibus periculoſiſſimis implicata, exiſtit. *Lud. Mercatus.*
Tertiana peſtilens, *P. Sal. Diverſus.*
Tertiana maligna peſtilens, *Riverii.*
Morbus Hungaricus. *Lang. Lemb. Sennert. Jordan.*
Languor Pannonicus, *Cober.*
Amphimerina Hungarica, *Sauv.* ſp. 10.
Hemitritæus peſtilens, *Schenck*, ex *Corn. Gamma.*
Febres peſtilentes Ægyptiorum. *Alpin.*
Febris tertiana epidemica, *Bartholin.*
Febres epidemicæ, autumni 1657 et 1658, *Willis.*

Febris ſynoches epidemica, ab anno 1658 ad 1664, et poſtea ab anno 1673 ad 1691, *Morton.*
Febres autumnales incipientes, *Sydenham.*
Affectus epidemicus Leidenſis, *Fr. Sylvii.*
Morbus epidemicus Leidenſis, 1669, *Fanois.*
Tertianæ pernicioſæ et peſtilentes, et febres caſtrenſes epidemiæ, *Lanciſi.*
Febres intermittentes anomalæ et mali moris, *Hoffman.*
Febris cholerica minus acuta, *Hoffman.*
Febris epidemica Leidenſis, anno 1719, *Koker*, apud *Haller.* Diſp. tom. V.
Amphimerina paludoſa, *Sauv.* ſp. 19.
Febris paludum, *Pringle.*
Bononienſis conſtitutio hiemalis 1729, *Beccari* in A. N. C. vol. III.
Amphimerina bilioſa, *Sauv.* ſp. 22.
Febris caſtrenſis, *Pringle.*
Febris putrida epidemica, *Huxham de aëre ad ann.* 1729.
Febris bilioſa Lauſanenſis, *Tiſſot.*
Tritæophya Wratiſlavienſis *Sauv.* ſp. 3. Hahn. Epidemia verna Wratiſlav. in App. ad. A. N. C. vol. X.
Tritæophya Americana, *Sauv.* ſp. 12.
Febris anomala Batava, *Grainger.*
Morbus Naronianus, *Pujati.*
Febris continua remittens, *Hillary*'s diſeaſes of Barbadoes.
Febris remittens Indiæ orientalis, *Lind*, diſſ. inaug. 1768.
Febris critica et febr. bilioſa æſtatis, *Rouppe.*
Febris remittens regionum calidarum, *Lind* on the diſeaſes of hot climates.

A. Tertiana cholerica ſive dyſenterica, *Tort.* Therap. Special. lib. iii. cap. 1. *Lautter.* Hiſt. Med. caſ. 6. 16. 17. 20. *Morton*, App. ad. Exerc. II.

B. Tertiana ſubcruenta ſive atrabilaris, *Tort.* ibid. Never ſeen by *Cleghorn.*

C. Tertiana cardiaca, *Tort.* ibid. *Lautter.* Hiſt. Med. caſ. 15. 23.
Amphimerina cardiaca, *Sauv.* ſp. 5.
Tritæophya aſſodes, *Sauv.* ſp. 6.
Febris continua aſſodes, *Vog.* 27.

D. Tertiana diaphoretica, *Tort.* ibid.
Tritæophya typhodes, *Sauv.* ſp. 4.
Tritæophya elodes, *Sauv.* ſp. 5.
Febris continua elodes, *Vog.* 21.

E. Tertiana ſyncopalis, *Tort.* ibid. *Lautter.* caſ. 11. 12. 13. 15. 16.
Tritæophya ſyncopalis, *Sauv.* ſp. 1.
Amphimerina ſyncopalis, *Sauv.* ſp. 4.
Amphimerina humoroſa, *Sauv.* ſp. 6.

Febris continua ſyncopalis, *Vog.* 29.
F. Tertiana algida, *Tort.* ibid. *Lautter.* caſ. 13.
Amphimerina epiala, *Sauv.* ſp. 3.
Amphimerina phricodes, *Sauv.* ſp. 7.
Tritæophya leipyria, *Sauv.* ſp. 9.
Tertiana leipyria, *Sauv.* ſp. 23. *Valcarenghi* Med. Ration. p. 18.
Febris continua epiala et leipyria, *Vog.* 19. et 24.
G. Tertiana lethargica, *Tort.* ib.
Tritæophya carotica, *Sauv.* ſp. 7. *Lautter.* 1. 7. 14.
Tertiana apoplectica, *Morton.* Exerc. I. cap. ix. hiſt. 25.
Tertiana ſoporoſa, *Werlhof.* de febr. p. 6.
Febris epidemica Urbevetana, *Lanciſ.* de noxis pal. effluv. I. II. c. 3.

The remittent fevers are much more dangerous than the true intermittents, as being generally attended with much greater debility of the nervous ſyſtem and tendency to putreſcency in the fluids than the latter. Sauvages divides his tritæophya, a remittent tertian, into the following ſpecies.

1. *Tritæophya ſyncopalis*, or that attended with fainting. It begins like a tertian, with cold ſucceeded by heat and profuſe ſweating; but attended with much more dangerous ſymptoms, ſuch as cardialgia, enormous vomiting, great weakneſs, ſmall contracted pulſe, coldneſs of the extremities, and unleſs timely aſſiſtance be given, kills during the ſecond or third paroxyſm.

2. The *cauſus*, or burning fever of Hippocrates, returns every third day without any new ſenſation of cold; and is attended with great thirſt, heat, but without diarrhœa or ſweat, and continues only for one week or two at the utmoſt. It attacks chiefly young people of a robuſt and bilious habit of body, who have been accuſtomed to much exerciſe, and expoſed to the ſun during the heats of ſummer, and have alſo uſed a phlogiſtic regimen. The tongue is dry, ſometimes black; the urine of a red or flame colour; together with pain of the head, anxiety, and ſometimes other ſymptoms ſtill more dangerous.

3. *Tritæophya Vratiſlavienſis*, was a peſtilential diſeaſe occaſioned by famine, during which the people fed on putrid aliments: the air was infected by the vaſt number of bodies of thoſe ſlain in battle, and the inhabitants were alſo dejected by reaſon of being deprived of their harveſt, and other calamities; to all which was added the continuance of a calm in the atmoſphere for a long time. It began with an acute fever, leipyria or coldneſs of the external parts and ſenſation of burning heat inwardly; general weakneſs; pain of the head and præcordia; ſerous or bilious diarrhœa; a delirium, in ſome furious, and accompanied with a dread of being expoſed to the air; on the ſecond day the thirſt was violent, attended with a bilious vomiting as well as diarrhœa, tough viſcid ſpitting, fainting, burning heat in the bowels, the tongue dry and

ſeeming as if burnt with a hot iron, a ſuppreſſion of the voice, anxiety, ſtupor; after which quickly followed convulſions and death. In ſome fevers a leipyria came on with an exceeding great cold of the extremities, preſently followed by an intolerable heat of the viſcera, with ſymptomatic ſweats, violent diarrhœa, followed by a very itchy miliary eruption. On the fourth day came on copious ſweats, ſpaſms of the lower jaw, nauſea, involuntary paſſing of urine, ſlight delirium, a flux of ichorous matter from the noſtrils, an exceeding tough ſpitting, an epilepſy, and death. Profeſſor Hahn, who gives the hiſtory of this diſeaſe, was himſelf attacked by it, and ſuffered in the following manner: On the firſt day was a violent feveriſh paroxyſm without rigor, a ſharp pain in the occiput, and immediately an inflammatory pain over the whole head; the feet were extremely cold, and the extremities rigid, with ſpaſms. The pain continued to increaſe daily to ſuch a degree, that the contact of the air itſelf became at laſt intolerable; a dejection of mind and incredible weakneſs followed; he paſſed reſtleſs nights with continual ſweating, heavy and pained eyes, and an univerſal ſenſation of rheumatiſm over the whole body. On the third day the pains were aſſuaged, but he had a very bad night. On the fourth day all the ſymptoms were worſe, the feet quite chilled, the hands very red and agitated with convulſive motions; he was terrified with apprehenſions of death, and had a vomiting every now and then: this day ſponges dipped in cold water were applied over the whole body, and he uſed cold water for his drink. On the eighth day the pulſe was convulſive; and the pains were ſo violent, that they made him cry out almoſt continually. On the ninth day he was delirious, and threw up ſome grumous blood. On the eleventh his pulſe was more quiet, and he had a ſweat; a decoction of the bark was given: his voice was broken, his ſpeech interrupted, and his teeth chattered one upon another. On the twelfth his jaw was convulſed, he had a riſus ſardonicus, and deafneſs; after which, the paroxyſms returned leſs frequently, and only towards night. On the fourteenth he had a chilling cold over the whole body, a cold ſweat; frequent lotions were applied, and all the ſymptoms became milder. On the eighteenth he had a quick delirium, but fainted as ſoon as taken out of bed; a ſenſation of hunger, followed by copious ſweats; profound ſleep; an averſion from noiſe; every thing appeared new and extraordinary. On the thirty-ſixth a cholera; on the forty-eighth a ſcaling off of the ſkin, and falling off of the nails. This epidemic carried off above 3000 people at Warſaw. Frequent lotion of the body either cold or tepid, watery glyſters, and the copious introduction of watery fluids under the form of drink, were of ſervice. But the moſt favourable criſis was under the form of ſome cutaneous eruption.

4. *Tritæophya typhodes.* The principal ſymptom of this fever was a continual ſweat, with which the patients were almoſt always

wet; with paroxyſms returning every third day. Sauvages tells us, that he had twice an opportunity of obſerving this fever; one was in the teacher of an academy, about 40 years of age, and of a melancholic temperament. He ſweated every other night ſo plentifully, that he was obliged to change his linen nine times; and even on the intermediate days was never perfectly free of fever, and had his ſkin moiſtened with ſweat. The other was of a woman who went about in man's clothes, and was diſcovered only after her death. The diſeaſe began with a ſlight ſenſation of cold, after which ſhe ſweated for eight hours. It was attended with the higheſt debility, anxiety, and at the ſame time an inſatiable hunger.

5. *Tritæophya elodes*, was an inflammatory epidemic, but not contagious, terminating about the 14th or 21ſt day. The diſeaſe came on in the night-time, with diſturbed reſt, univerſal weakneſs, watchings, great heat and ſweat, redneſs of the face and almoſt of the whole body, ſparkling eyes, the tongue dry and white; a hard, tenſe, and turgid pulſe: about the third day a kind of phrenſy frequently came on with the feveriſh paroxyſm, the forerunner of an univerſal miliary eruption; or, what was worſe, with purple ſpots ſo cloſe together, that they looked like an eryſipelas of the whole body. Sometimes bliſters of the ſize of ſmall pearls, filled with acrid ſerum, appeared on the neck, armpits, and trunk of the body, which were of all others the moſt dangerous. There was a variety of the diſeaſe, which our author calls the *humoralis*, and in which the pulſe was ſoft and feeble, with greater weakneſs over the whole body, and the diſpoſition to ſleep more frequently than in the other; the eyes languid; the tongue very white, but not dry; and worms were diſcharged.

6. *Tritæophya aſſodes*. This ſpecies aroſe from a foulneſs of the primæ viæ, and the effluvia of waters in which hemp had been ſteeped. It began with rigor, followed by great heats, reſtleſſneſs, toſſing of the limbs, terrible faintings, immoderate thirſt, dryneſs of tongue, delirium, and at length exceſſive watchings; theſe laſt, however, were leſs dangerous than vertigoes or comatoſe diſpoſitions, which brought on convulſions or apoplexies.

7. *Tritæophya carotica*. This had exacerbations every other evening; and its diſtinguiſhing ſymptom was an exceſſive inclination to ſleep, preceded by a ſevere headach, and followed by delirium, and ſometimes convulſions; the tongue was black, and the patient inſenſible of thirſt after the delirium came on. In thoſe caſes where the diſeaſe proves fatal, a ſubſultus tendinum and other grievous ſymptoms come on.

8. *Tritæophya leipyria* is only a variety of the tritæophya cauſus, already deſcribed.

9. *Tritæophya deceptiva*. This ſpecies at firſt aſſumes the appearance of a continued fever; but afterwards degenerates into a

remittent, or even an intermittent. It is described by Sydenham, but attended with no remarkable symptoms.

10. The last of Sauvages's species of Tritæophya belonging to the remitting tertian is the *Americana*. This, according to Sauvages, is the ardent fever with which the Europeans are usually seized on their first coming to America, and it generally carries off one half of them. Of this there are two varieties, the *very acute* and the *acute*. The very acute ends before the seventh day. It comes on a few days after the person's arrival, with loss of appetite, with dyspnœa and sighing from weakness, head-ach, lassitude, pain of the loins: a pyrexia succeeds, with great thirst, sweat, and heat; the sickness increases, nausea comes on, with vomiting of porraceous bile; the tongue rough, the extremities often cold; watching, furious delirium; and the patient frequently dies on the third day. Copious sweats, and a plentiful hemorrhagy from the nose on the fifth day, but not sooner, are serviceable; but a bilious diarrhœa is the best crisis of all.

The acute kind terminates most frequently on the ninth, but very rarely goes beyond the fifteenth day. Death frequently comes on between the fourth and seventh day. It begins with head-ach, pain in the loins, and sometimes shivering; great lassitude, dyspnœa, thirst; burning fever, increasing every third day; inflation of the abdomen, pain at the pit of the stomach, nausea, and bilious vomiting. Such is the state of the disease within twenty-four hours. The eyes are red, and full of tears; the urine pellucid; there is a low delirium, and continual anxiety; the tongue is dry and red, and sometimes, though rarely, black, which is a still worse sign; the pulse, formerly strong and full, sinks about the fourth day, and becomes tense and spasmodic. If a carus then comes on, the patient dies on the fifth or sixth day; but if the pulse keeps up, and no carus comes on, a crisis is to be expected by sweat, by a copious hemorrhagy from the nose, or, which is still more safe, by a bilious diarrhœa, which is never salutary if it comes on before the fifth day.

To the remitting tertian also belong the following species mentioned by Sauvages, viz.

1. *Tertiana subcontinua.* This begins like a genuine tertian, and at first hath distinct paroxysms; but these grow gradually more and more obscure, the disease acquiring daily more of the appearance of continued fever, by which it is to be distinguished from the other varieties of this species. It is not unfrequently joined with those symptoms which attend the fatal fever already mentioned; as cardialgia, cholera, syncope, &c. but in a much less degree. The disease commonly begins with little or no sense of cold, but rather a sensation of heat; when the tertian is doubled, it has first a slighter and then a more severe fit; and thus goes on with an exacerbation on the even days: and though it should change from a dou-

ble into a ſingle tertian, we are ſtill to ſuſpect it, if a weak fit is the forerunner of a very ſtrong one. This change of the tertian into a continued fever is alſo to be prognoſticated if a heat remarkable to the touch is perceived on the day of intermiſſion, together with ſome diſturbance of the pulſe, thirſt, and dryneſs of the tongue; all of which ſhow an univerſal tendency to inflammation: the ſame is foretold by the urine being in ſmall quantity, and very red, or of a ſaffron colour; alſo an ulcerous or aphthous inflammation of the throat, with difficulty of ſwallowing, or any very ſevere ſymptom coming on in the beginning of the diſeaſe, excepting only a delirium, which is eaſily removed.

2. *Quotidiana deceptiva.* This is a diſorder of an inflammatory kind, with a ſtrong tendency to putreſcency, and ſometimes aſſumes the form of a quotidian. In it the patient frequently complains of cold when he really is hot, and the remiſſion is very indiſtinct; and the diſeaſe is known by the great languor of the patient and the foulneſs of his tongue.

3. *Amphimerina cardiaca* is an acute malignant fever, with daily exacerbations, attended with fainting and vomiting of green bile. Afterwards, the weakneſs increaſing, the patient's extremities grow cold, and a profuſe ſweat comes on, which is frequently ſucceeded by death on the fourth day. Another ſpecies reſembling this Sauvages calls the *ſyncopalis*; but the cardiaca differs from it in being attended with cardialgia.

4. *Amphimerina paludoſa.* This is the fever deſcribed by the Britiſh phyſicians under many different names, and appearing under various forms, according to the different conſtitutions of the patients. This fever in the Eaſt Indies, according to Dr. Lind of Windſor, generally comes on ſuddenly, and begins with a ſenſe of debility and a very great lowneſs of ſpirits. Theſe ſymptoms are attended with a greater or leſs degree of chillneſs, a dizzineſs, a nauſea, very acute pains in the head and loins, and a trembling of the hands; the countenance is pale, the ſkin commonly very dry and corrugated, the eyes dull and heavy, the pulſe quick and ſmall, the breath generally difficult, and interrupted with hiccough.

As the paroxyſm increaſes, the chillneſs now and then gives way to irregular heats, which ſoon become violent and permanent; the nauſea likewiſe increaſes; and in ſome there comes on a vomiting, in which they throw up a great deal of bile. Sometimes bile is likewiſe voided by ſtool. The ſkin grows red; the eyes ſmall, and ſometimes not a little inflamed. The pulſe becomes fuller, and the breath more difficult, attended with great reſtleſſneſs and a troubleſome thirſt; notwithſtanding which (ſo great is the nauſea) the patient cannot endure any kind of liquids. The tongue becomes foul, and the pain of the head and loins more violent; a delirium then follows; a ſlight moiſture appears on the face, and from thence ſpreads to the other parts; whilſt the violence of the

other ſymptoms abates, and ſhows the beginning of a remiſſion, which is completed by plentiful ſweats.

On the fever's remitting, the pulſe returns almoſt to its natural ſtate; the pains of the head and loins ſtill continue, though ſomewhat leſs violent, as likewiſe the nauſea and want of appetite. When the diſeaſe gains ſtrength the remiſſion is ſcarcely obvious, and is immediately followed by another paroxyſm; which begins, not indeed with ſo great a ſhivering, but is attended with a greater pain of the head, the greateſt anxiety, a heart-burn, nauſea, vomiting, and bilious ſtools. The matter moſt commonly evacuated by vomit and ſtool is whitiſh, like chalk and water, or curdled milk which is vomited by ſucking children, when the curd is much broke down. A heat, immoderate thirſt, and delirium, now come on. The tongue becomes more foul; the teeth and inſide of the lips are covered with a black cruſt; the breath grows hot and fetid: another remiſſion enſues, attended with a ſweat; but this remiſſion is both ſhorter and leſs obvious than the firſt.

This ſecond remiſſion is ſucceeded by a paroxyſm, in which the ſymptoms are far more violent than in the former; that which the patient diſcharges by vomiting and purging is more fetid; the mouth, teeth, and inſide of the lips, are not only covered with a black cruſt, but the tongue becomes ſo dry and ſtiff, that the patient's voice can ſcarce be heard. Violent delirium, with reſtleſſneſs and anxiety, come on chiefly during the paroxyſm; nor do theſe ſymptoms abate till the fever remits, and the patient ſweats.

When the fever becomes ſo violent, during the third fit, as to end in death, which is generally the caſe, ſome of the ſick have a coma; in others the delirium becomes more violent. The diſcharges now become more fetid, and have a cadaverous ſmell; the ſtools are involuntary; the pulſe is ſo quick, ſmall, and irregular, that it is ſcarce to be counted, or even felt; a cold ſweat is diffuſed over the whole body, eſpecially the head and neck: the face becomes Hippocratic and convulſed; the patient picks the bed-clothes; a ſubſultus tendinum comes on; the ſick lie conſtantly on their backs and inſenſibly ſlide down to the foot of the bed; their extremities grow cold; they are then ſeized with convulſions, with which the ſcene cloſes.

In this fever, the urine, which at the beginning is pale, becomes of a deeper colour by degrees, but without depoſiting any ſediment. There ſeldom or never appear any petechiæ, and the prickly heat which was before on the ſkin vaniſhes on the firſt appearance of the fever. But though theſe were the general ſymptoms of this diſorder, they varied in the different ſubjects, and at different ſeaſons of the ſame year. The pulſe, for example, in ſome, was quick in the beginning of the diſorder; in others, it varied with the other ſymptoms. The ſkin was generally dry in the beginning of the fit; but in ſome it was moiſt, and covered with ſweat from the

very firſt beginning of the diſeaſe. In the month of September, when the diſorder raged moſt, the remiſſions were very imperfect and obſcure; but, on the return of winter and the healthy ſeaſon, they became more regular, and the diſeaſe aſſumed the appearance of an intermitting fever, to ſuch a degree as at length not to be diſtinguiſhed from it. In ſome the remiſſions could ſcarce be perceived, and the fever continued for two weeks without any material change for the better or the worſe. At this time numbers were ſeized with it. When the diſorder continued for any time without a change, it generally ended in death; while the weather grew better, it ſometimes, in the ſpace of a few days, from a common fever became an intermitting one, and the patient recovered, unleſs his liver, which was ſometimes the caſe, happened to be affected. The cure of an inflammation of the liver proved uncertain and tedious: as it was commonly followed by a colliquative diarrhœa, which generally endangered the patient's life.—Every ſucceeding paroxyſm was obſerved to be more dangerous than the preceding; the third generally proved fatal; ſome died during the firſt. When this happened, the fever, in the language of the country, was called a *puca*, that is, a ſtrong fever.

This diſeaſe, according to Dr. Lind of Haſlar hoſpital, is the autumnal fever of all hot countries, the epidemic diſeaſe between the tropics, and the diſeaſe moſt fatal to all Europeans in all hot and unhealthy climates. All authors agree that intermittents in general, but particularly this dangerous kind of them, are produced by heat and moiſture. Dr. Lind of Windſor remarks, that the European ſeamen are very ſubject to the fever above mentioned when they happen to arrive at Bengal in autumn. They are prediſpoſed to it from the nature of their food, their confinement on board, the very great heats to which they are expoſed during the voyage, and their lying for hours together expoſed to the night colds.

Moſt of the meat uſed by the crews of thoſe ſhips is ſalted, and often in a putrid ſtate, without any freſh vegetables, they having only biſcuits, and ſome other farinaceous matters. The quantity of the vinous or ſpirituous liquors allowed them is by far too ſmall to ſubdue the putreſcent diſpoſition of their animal-food. Their fluids conſequently become, from day to day, more and more putreſcent, and of courſe the more apt to breed and contract this diſorder. This diſpoſition is likewiſe induced by their being ſtowed very cloſe together, and that for a conſiderable length of time, and in a foul air, eſpecially when the weather happens to be too ſtormy to permit the hatches and port-holes to be kept open.

Though the heats they endure in the voyage to India are leſs conſiderable than thoſe of the country itſelf, yet they are too much for an European conſtitution to bear. The general heat at ſea within the tropics is about 84° of Fahrenheit's thermometer, which is ſufficient to relax them, and promote a corruption of their hu-

mours, especially when it coincides with the above causes. It likewise creates a languor and indolence, which alone are sufficient to increase that putrescence. These causes are apt to be considerably aggravated by the men being often exposed when on duty, for hours together, to rain, damp, and cold air; a circumstance which frequently happens to them when working their ships up the river Ganges in the night-time. Hence the perspiration is checked, and the excrementitious fluid which used to be discharged by the skin being retained in the body, contributes, he thinks, very much towards the predisposition to this disease.

But the most powerful of all the remote causes is justly thought to be the effluvia of marshes replete with putrid animal substances. We have not, however, been able to determine from what kind of putrid animal substances these effluvia derive their virus. For that every kind of putrefaction has not such an effect appears from this, that neither practical anatomists, nor those who by their trades are exposed to the putrid effluvia of animals, for instance, such tanners and butchers as keep their shops and stalls very dirty, are more subject than others to putrid diseases. Nor are the ship-stewards and their servants, whose business it is to deliver out their provisions to the ships' crews, and who spend the most of their time amongst the putrid and rancid effluvia of the places in which those provisions are kept, more subject to putrid fevers than their shipmates. But whatever be in this, we are well assured that some particular putrid fermentations produce noxious vapours, which, united with those of marshes, render them the more pernicious. Hence evidently proceeds the extreme unhealthfulness of a place called *Culpi*, on the eastern bank of the Ganges. The shores about it are full of mud, and the banks covered with trees. Opposite to the place where the ships lie there is a creek, and about a mile from its entrance stands the town of Culpi: the ships lie about a mile from the shore. None of the sailors on board the ships stationed at this place enjoyed their health. The burying-ground also contributed not a little to spread the infection. The ground being marshy, the putrid water flowed from the old graves into the new ones, which infected the grave-diggers and those that attended the funerals; and from this cause many were suddenly seized while they were performing the last duty to their companions. This place has ever been remarkable for the unhealthfulness of its air. It was once customary to send some of the Company's servants here to receive the cargoes of the ships, and send them to Calcutta; but so many of them died on this duty, that the Company was at length obliged to dispense with it.

Hence it plainly appears, how apt putrid animal and vegetable substances are to render the effluvia of fenny places more pernicious than they would otherwise be. The reason why great inundations of the Nile and Ganges are followed by a healthy season is,

that by this means the putrid animal and vegetable ſubſtances diſperſed over the contiguous countries are carried off into the ſea.—The noxious vapours ariſing from fens ſpread but a little way. Dr. Lind has often known ſhips' crews at a very little diſtance from the ſhore quite free from this diſorder. But although theſe marſh miaſmata firſt bring on the diſeaſe, yet contagion particularly ſpreads it, and renders it more epidemic. Thus the Drake Eaſt-Indiaman continued free from the diſorder for two weeks together, when ſhe had no communication with the other ſhips; whereas, as ſoon as the diſorder was brought on board, many were ſeized with it within a few days in ſuch a manner as to leave no room to entertain the leaſt doubt concerning its peſtilential nature.

Dr. Lind of Haſlar hoſpital has given a very curious and learned account of the appearance of this fever throughout the various parts of the globe. It was very common in England in the years 1765 and 1766, one obvious cauſe of which was the prevalence of the eaſtern wind. This wind in England is often ſaid to bring with it a fog from the ſea; but the truth of the matter is, that in many places of this iſland the eaſt wind frequently raiſes a copious vapour from water, mud, and all marſhy or damp places. To this exhaling quality of the eaſtern wind Dr. Lind has often been an eye-witneſs. When the wind changes to the eaſt, the mud ſometimes ſends up a vapour as thick as ſmoke; and the doctor has obſerved two fiſh-ponds in his neighbourhood, one of freſh and the other of ſalt water, which on the approach of an eaſterly wind ſometimes alſo emit a denſe vapour, as from a pot of boiling water. In order to view this phenomenon diſtinctly, the perſon ſhould ſtand at about 100 yards diſtance from the mud or ponds. If the ſun ſhines when the wind changes to the eaſt, he will obſerve a conſtant ſteam of vapours ariſing out of the ponds, from about five to ten yards in height, while the air about him remains ſerene. As the vapour or fog ariſing from other bodies glides along the ſurface of the earth, and is brought by the eaſterly wind to the ponds, he will ſtill be able, for ſome time, to diſtinguiſh the vapours aſcending perpendicularly out of the ponds from thoſe which are carried in an horizontal direction by the wind; eſpecially if the ſun continues to ſhine, though faintly.

This evaporating quality of the eaſt-wind ſeems to manifeſt itſelf alſo by its effects both on the thermometer and the human body; for a thermometer hung over a damp piece of ground during the fogs or exhalations ariſing from it, will often indicate a degree of cold below the freezing point. The chillneſs of the body, ſo ſenſibly perceived when in this ſituation, ſeems to proceed from the ſame cauſe, and to produce nearly the ſame ſenſations, which the damp ariſing from the wet floor in a chamber communicates to thoſe who happen to be in it.

Winds are not conſtant in their effects. As we have ſome-

times warm weather with a north-wind, and ſometimes very little heat with one blowing from the ſouth; ſo the fogs attending an eaſt-wind are not conſtant, neither is the evaporation above mentioned at all times to be perceived. It is poſſible, however, that in all this there may be a deception; and that inſtead of ſuppoſing the quantity of vapours exhaled to be increaſed by an eaſterly wind, the coldneſs of that wind may only condenſe and render viſible the vapours in the air at that time. But even this ſuppoſition is liable to great objections, as our coldeſt north-winds ſeldom or never produce ſuch an effect, but on the contrary are attended with dry and ſerene weather.

Be this as it will, however, an eaſt-wind is uſually accompanied with a cold, damp, and unwholeſome vapour, which is obſerved to affect the health both of animals and vegetables, and in many places to produce obſtinate intermitting fevers, and alſo to occaſion frequent relapſes. In particular ſpots of the low, damp iſland of Portſea, the ague frequently prevails during the autumnal ſeaſon, and in ſome years is much more frequent and violent than in others. It is alſo obſervable, that this diſeaſe always attacks ſtrangers, or thoſe who have formerly lived on a drier ſoil, and in a more elevated ſituation, with greater ſeverity than thoſe who are natives of the iſland.

The year 1765 was remarkable, not only for the long continuance of the eaſterly winds, but for an exceſſive degree of heat, which produced a more violent and general rage of thoſe diſeaſes than had been known for many years before. In the month of Auguſt the quickſilver in Fahrenheit's thermometer often roſe to 82° in the middle of the day. This conſiderable addition of heat, together with the want of refreſhing rains, greatly ſpread the fever, increaſed its violence, and even changed its form in many places. At Portſmouth, and thoughout almoſt the whole iſland of Portſea, an alarming continual or remitting fever raged, which extended itſelf as far as Chicheſter. At the ſame time, the town of Goſport, though diſtant only one mile from Portſmouth, enjoyed an almoſt total exemption from ſickneſs of every kind; whereas in the neighbouring villages and farm-houſes, a mild regular tertian ague diſtreſſed whole families. The violence of the fever, with its appearances in a continued, remitting, or intermitting form, marked in ſome meaſure the nature of the ſoil. In Portſmouth the ſymptoms were bad, worſe at Kingſton, and ſtill more dangerous and violent at a place called *Half-way Houſes*; a ſtreet ſo named, about half a mile from Portſmouth, where ſcarcely one in a family eſcaped this fever, which generally made its firſt attack with a delirium. In the large ſuburb of Portſmouth, called the *Common*, it ſeemed to rage with more violence than in the town, ſome parts excepted; but even whole ſtreets of this ſuburb, together with the houſes in the dock-yard, eſcaped its attack.

The marines, who were three times a-week exercised early in the morning on South-Sea beach, suffered much from the effect of the stagnant water in an adjoining morass. Half a dozen of them were frequently taken ill in their ranks when under arms; some being seized with such a giddiness of the head, that they could scarcely stand; while others fell down speechless, and upon recovering their senses complained of a violent head-ach. When such patients were received into the hospital, it was observed that some few had a regular ague, but that far the greater number laboured under a remitting fever, in which sometimes indeed there was no perceptible remission for several days. A constant pain and giddiness of the head were the most inseparable and distressing symptoms of this disease. Some were delirious, and a few vomited up a quantity of bile; but in all the countenance was yellow. A long continuance of the fever produced a dropsy or jaundice, or both. Even a slight attack reduced the most robust constitution to a state of extreme debility; and this weakness, together with the giddiness, continued for a long time after the fever. A scabby eruption now and then made its appearance on the lips and the corners of the mouth: but dry itchy spots over the whole body, resembling much the common itch, and seeming to partake of the nature of that disease, were more frequently observed in the patients at Portsmouth, where there was not the least reason to suspect any infection.

Such is the appearance of the remitting fever occasioned by marsh miasmata in England. In the Netherlands its symptoms are not much different. Dr. Lind informs us, that at Middleburg, the capital of West Zealand, a sickness generally reigns towards the latter end of August, or the beginning of September, which is always most violent after hot summers. It commences after the rains which fall in the end of July; the sooner it begins the longer it continues, and it is only checked by the coldness of the weather. Towards the end of August and the beginning of September it is a continual burning fever, attended with a vomiting of bile, which is called the *gall sickness*. This fever, after continuing three or four days, intermits, and assumes the form of a double tertian; leaving the patient in a fortnight, or perhaps sooner. Strangers that have been accustomed to breathe a dry pure air do not recover so quickly. Foreigners in indigent circumstances, such as the Scots and German soldiers, who are garrisoned in the adjacent places, are apt, after those fevers, to have a swelling in the legs and a dropsy; of which many die.

These diseases, the doctor observes, are the same with the double tertians common within the tropics. Such as are seized with the gall-sickness have at first some flushes of heat over the body, a loss of appetite, a white foul tongue, a yellow tinct in the eyes, and a pale colour in the lips. Such as live well, drink wine, and have

warm clothes and good lodgings, do not suffer so much during the sickly season as the poor people; however, these diseases are not infectious, and seldom prove mortal to the natives.

Sir John Pringle observes, that the prevailing epidemic of autumn in all marshy countries, is a fever of an intermitting nature, commonly of a tertian form, but of a bad kind; which, in the dampest places and worst seasons, appears as a double tertian, a remitting, or even an ardent fever. But however these fevers may vary in their appearance according to the constitution of the patient and other circumstances, they are all of a similar nature. For though, in the beginning of the epidemic, when the heat, or rather the putrefaction in the air, is the greatest, they assume a continued or a remitting form, yet by the end of autumn they usually terminate in regular intermittents.

In Zealand, where the air is more corrupted than in other parts of the Netherlands, this disease, as we have already observed, is called the *gall-sickness*; and indeed both the redundance and depravation of the gall is sometimes so great, that it has been generally ascribed to the corruption and overflowing of that humour. But though it cannot with justice be said to originate from corrupted gall or bile, it is certain that the disease may be continued, and the symptoms aggravated, by an increased secretion and putrefaction of the bile occasioned by the fever. In proportion to the coolness of the season, to the height and dryness of the ground, this disease is milder, remits or intermits more freely, and removes further from the nature of a continued fever. The higher ranks of people in general are least liable to the diseases of the marshes; for such countries require dry houses, apartments raised above the ground, moderate exercise, without labour in the sun or evening damps, a just quantity of fermented liquors, plenty of vegetables, and fresh meats. Without such helps, not only strangers, but the natives themselves are sickly, especially after hot and close summers. The hardiest constitutions are very little excepted more than others: and hence the British in the Netherlands have always been subject to fevers.

By this disease the British troops were harassed throughout the whole of the war from 1743 to 1747. It appeared in the month of August 1743; the paroxysms came on in the evening, with great heat, thirst, a violent head-ach, and often a delirium. These symptoms lasted most of the night, but abated in the morning, with an imperfect sweat, sometimes with an hæmorrhagy of the nose or a looseness. The stomach from the beginning was disordered with a nausea and sense of oppression, frequently with a bilious and offensive vomiting. If evacuations were either neglected, or too sparingly used, the patient fell into a continued fever, and sometimes grew yellow, as in a jaundice. When the season was further advanced, this fever was attended with a cough, rheumatic

ains, and fizy blood. The officers being better accommodated han the common men, and the cavalry who had cloaks to keep hem warm, were not ſo ſubject to it: and others who belonged o the army, but lay in quarters, were leaſt of all affected; and he leſs in proportion to their being little expoſed to heats, night-lamps, and the other fatigues of the ſervice.

In this manner did the remitting fever infeſt the army for the remaining years of the war; and that exactly in proportion to their diſtance from the marſhy places, of which we have ſeveral notable inſtances in Pringle's obſervations. In Hungary the ſame diſeaſe appears with ſtill more violence, and is readily complicated with fevers of a truly peſtilential nature, by which means it becomes extremely dangerous. Hungary is acknowledged to be the moſt ſickly climate in Europe, and indeed as bad as any in the world. Here it was where the cruſaders, in only marching through the country to invade Aſia, often loſt half their number by ſickneſs; and where the Auſtrians not long ſince buried, in a few years, above 40,000 of their beſt troops, who fell a ſacrifice to the malignant diſpoſition of the Hungarian air. The reaſon of this uncommon malignity is, that Hungary abounds with rivers, which, by often overflowing, leave that low flat country overſpread with lakes and ponds of ſtagnating water, and with large unwholeſome marſhes. So great is the impurity of theſe ſtagnated waters, that by them the rivers, even the Danube, whoſe courſe is ſlow, become in ſome places corrupted and offenſive. The air is moiſt, and in ſummer quite ſultry. In the nights of harveſt, Kramer tells us, it was ſo very damp, that the Auſtrian ſoldiers could not ſecure themſelves from the moiſture even by a triple tent covering. Here epidemical diſtempers begin conſtantly to rage during the hotteſt months of the year; which are July, Auguſt, and September: and theſe complaints, according to the obſervations of the phyſician above mentioned, are the ſame with thoſe which are epidemic upon the coaſt of Guinea, and in the ſickly climates of the Eaſt and Weſt Indies, of which, malignant fevers of the remitting and intermitting kind are the moſt common and dangerous.

The heat of the ſun in Hungary, according to the ſame author, is more intenſe than in any other country of Europe; and in proportion to the heat is the peſtilential quality of the marſhy exhalations. It is conſtantly obſerved, that the nearer any city or fort is to a moraſs or a large river with foul and oozy banks, the more unhealthy are the inhabitants. At ſuch ſeaſons and places, the air ſwarms with numberleſs inſects and animalcules, a ſure ſign of its malignant diſpoſition; and the hotter the ſummer, the more frequent and mortal are the diſeaſes. In ſhort, this country, on account of its unhealthineſs, has been termed *the grave of the Germans*; and in Italy, the Campania of Rome is almoſt equally

unhealthy. Lancisius, physician to Pope Clement XI. furnishes us with a very striking instance of the malignant quality of the air of Campania. Thirty gentlemen and ladies of the first rank in Rome having made an excursion, upon a party of pleasure, towards the mouth of the Tyber, the wind suddenly shifting, blew from the south over the putrid marshes, when twenty-nine were immediately seized with a tertian fever, only one escaping.

The island of Sardinia is annually visited with an epidemical sickness, which rages from June to September, and is called by the natives the *intemperies*. In some years there is a want of rain for four or five months; and then it is that this sickness exerts its utmost violence, being always more fatal in some places than in others, and in particular to strangers. Of this the British had a severe proof in 1758.—Admiral Broderick, in the Prince ship of war, anchored in the bay of Oristagni, where twenty-seven of his men, sent ashore on duty, were seized with the epidemical disease of this island; twelve of them in particular, who had slept on shore, were brought on board delirious. All of them in general laboured under a low fever, attended with great oppression at the breast and at the pit of the stomach, a constant reaching, and sometimes a vomiting of bile; upon which a delirium often ensued. These fevers changed into double tertians, and terminated in obstinate quartan agues. It is worthy of remark, that in this ship, which lay only two miles from the land, none were taken ill but such as had been on shore, of whom seven died. The prior of a convent, making a visit to the English officers, informed them, that the intemperies of the island was a remitting or intermitting fever, and that he himself had suffered several attacks of it. Sardinia was formerly so remarkable for its unwholesome air, that the Romans used to banish their criminals thither; and it is at present but thinly peopled, owing to the mortality occasioned by this annual sickness. For although it is about 140 miles long, and in several places 75 miles broad, yet it is computed that the whole number of its inhabitants does not exceed 250,000: an inconsiderable number, when compared with the inhabitants of the lesser, but comparatively more healthful island of Corsica; though even there the French lost a number of their troops by intermitting and remitting fevers. In the island of Minorca, too, Dr. Cleghorn informs us, that fevers of this kind prevail exceedingly; that their types are various, their symptoms violent, the intermissions fallacious, and that they frequently and suddenly prove fatal. It is more than probable, he adds, from the accounts of several physicians and travellers, that epidemical tertians are not wholly confined to the coasts and islands of the Mediterranean, but that they are equally frequent and destructive in many other parts of the globe; and perhaps may be deemed the anniversary autumnal distempers of most hot countries in the

orld. And though in the mild climate of Britain, a tertian may lways eaſily be cured when once it is diſcovered; yet in warm limates, ſuch is the rapid progreſs of the diſeaſe, that it is neceſſary o know it in the very beginning, which is very difficult for thoſe who have never ſeen any but the tertians uſually met with in ritain.

From Dr. Cleghorn's account of Minorca, however, it doth ot appear why that iſland ſhould be ſo much infeſted with fevers f this kind, ſince it is far from being a marſhy country; nay, on ie contrary, is very dry. The ſouth wind, he obſerves, is very nhealthy; and it is the prevalence of this wind which brings on ie fever: but ſtill the difficulty is not removed, becauſe the a-air is ſo far from bringing on ſuch dangerous diſeaſes, that is one of the greateſt preſervatives againſt them when it in be had. As to the moiſture which muſt neceſſarily ac-ompany an inſular ſituation, that cannot reaſonably be admitted a cauſe of this or any other diſeaſe. In the London ledical Obſervations we find a paper on a ſubject very ſimilar the preſent, namely, the miſchiefs produced by lying in damp eets, or being expoſed to moiſt vapour. The author tells , that he hardly knows a diſeaſe the origin of which hath not ſome been aſcribed to lying in a damp bed, or ſitting in a wet om; and yet he does not know any one which will certainly produced by theſe cauſes, and people frequently expoſe them-lves to ſuch cauſes without ſuffering any ill effects. "It muſt owned indeed (ſays he), that the vapours ariſing from the bilge-ater of ſhips tend to produce ſcurvy. The ſwampy plains alſo ar the mouths of great rivers which are often overflowed, and w grounds which cannot readily be drained, and thoſe tracts of nd where the thickneſs and extent of the woods keep the ound moiſt and half putrid for want of ventilation, are deſtructive the neighbouring inhabitants, by occaſioning obſtinate inter-ittents in the colder climates, and peſtilential fevers in the hotter gions. But all this miſchief ariſes not merely from moiſture, t from an unventilated and putrid moiſture; for the inoffenſive-ſs of mere wetneſs, untainted with putridity, may be reaſonably ferred from the following conſiderations. The air is often fully urated with moiſture, and could not be more filled by the pours ariſing from a chamber covered with water; and yet neither any epidemical diſtemper produced by it, nor are thoſe remark-ly aggravated with which the ſick happen at that time to be af-ſted. The air from rivers and from the ſea is probably more re-niſhed with vapours than inland countries cleared of their oods: yet the moſt celebrated of the ancient phyſicians recom-nded the bank of a running river for the ſituation of a houſe, account of its peculiar healthfulneſs; and many invalids are

ſent by the modern phyſicians to the ſea ſide, only for the benefit of the ſea air.

" Where the ſailors are cleanly, and not too much crowded, they are often as healthy during long voyages at ſea, as they would have been upon any part of the land. Venice is not obſerved to be leſs healthy than London or Paris.

" Thoſe who are much diſpoſed to ſweat, lie many hours in bed-clothes impregnated probably with a leſs wholeſome moiſture than would have been left in the ſheets half-dried after waſhing; and I have not yet had reaſon to think that any remarkable injury was done to the health by the continuance of ſuch ſweats almoſt every night for weeks, and for months, except what aroſe from the too great copiouſneſs of this evacuation.

" Children, and ſuch as are troubled with the ſtone, and thoſe who, from other infirmities or age, conſtantly wet their beds with their urine, do not appear to ſuffer in their health on this account.

" It is a common practice, in ſome diſorders, to go to bed with the legs or arms wrapped in linen cloths thoroughly ſoaked in Malvern water, ſo that the ſheets will be in many places as wet as they can be; and I have known theſe patients and their bedfellows receive no harm from a continuance of this practice for many months. Nor can it be ſaid that the Malvern water is more innocent than any other water might be, on account of any ingredients with which it is impregnated; for the Malvern water is purer than that of any other ſpring in England which I ever examined or heard of.

" The greateſt valetudinarians do not ſcruple to ſprinkle lavender water upon their ſheets; and yet, when the ſpirit is flown off, there is left what is as truly water as if it had been taken from the river.

" Is it obſerved that laundreſſes are peculiarly unhealthy above other women, though they live half their time in the midſt of wet linen, in an air fully ſaturated with vapours? Many other employments might be mentioned, the perſons occupied in which are conſtantly expoſed to wet floors or pavements, or to be ſurrounded with watery vapours, or to have their clothes often wet for many hours together.

" Is it the coldneſs of wet linen which is to be feared? But ſhirts and ſheets, colder than any unfrozen water can be, are ſafely worn and lain in by many perſons, who, during a hard froſt, neither warm their ſhirts nor their ſheets.—Or does the danger lie in the dampneſs? But then how comes it to paſs, that a warm or cold bath, and long-continued fomentations, can be uſed, without the deſtruction of thoſe who uſe them? Or is it from both together? Yet we have long heard of the thickneſs

and continuance of the cold fogs in the seas north-west of England, but have never yet been told of any certain ill effect which they have upon those that live in these countries."

With regard to the causes of fevers, however, Dr. Lind is of opinion, that noxious vapours arising from the earth are for the most part to be blamed. Even in countries seemingly dry, and where violent rains are not frequent, he thinks that the air may load itself with putrid exhalations from the ground; and that, except in the burning deserts of Arabia or Africa, people are nowhere exempt from diseases occasioned by putrid moisture. In most of the hot countries, however, the pernicious effects of the putrid vapours are by no means equivocal. In Guinea, they seem to be more extraordinary than any-where else in the world; neither indeed can it be supposed, that a hot and moist atmosphere can be without putrescency. It may in general be remarked, that in sultry climates, or during hot weather, in all places subject to great rains, where the country is not cleared and cultivated, but is over-run with thickets, shrubs, or woods, especially if there are marshes or stagnating waters in the neighbourhood, sickness may be dreaded, and particularly the remitting fever of which we now treat. The fens, even in different counties of England, are known to be very prejudicial to the health of those who live near them, and still more so to strangers; but the woody and marshy lands in hot countries are much more pernicious to the health of Europeans. In all those unhealthy places, particularly during fogs or rains, a raw vapour, disagreeable to the smell, arises from the earth, and especially in the huts or houses. But of all the vapours which infest the torrid zone, the most malignant and fatal are the *harmattans:* they are said to arrive from the conflux of several rivers in the king of *Dormeo*'s dominions at Benin (the most unwholesome part of Guinea), where travellers are obliged to be carried on men's backs for several days' journey, through swampy grounds, and over marshes, amidst stinking ooze, and thickets of mangrove trees which are annually overflown. These vapours come up the coast to a surprising distance, with the south-east and north-east winds: and it has been observed, that in their progress they have often changed both the course of the winds and of the sea currents. The times of their appearance at Cape Coast are the months of December, January, or February. The north-east and south-east winds are always unhealthy, but particularly so during the harmattan season. Some years this vapour is scarcely perceptible; but in others it is thick, noxious, and destructive to the blacks as well as whites. The mortality is in proportion to the density and duration of the fog. It has a raw putrid smell; and is sometimes so thick, that a person or house cannot be discerned through it, at the distance of fifteen or twenty yards: and it continues so for ten or fourteen days; during which

it opens the ſeams of ſhips, ſplits or opens the crevices of wood as if ſhrunk or dried with a great fire, and deſtroys both man and beaſt. In the year 1754 or 1755, the mortality occaſioned in Guinea by this ſtinking fog was ſo great, that in ſeveral negro towns the living were ſcarce ſufficient to bury the dead. Twenty women brought over from Holland to the Caſtle *del Mina*, periſhed, together with moſt of the men in the garriſon. The gates of Cape Coaſt caſtle were ſhut up for want of centineis to do duty; the blacks dying at this time as well as the white people. It is lucky that it is only in ſome years that *harmattans* are ſo very thick and noxious, otherwiſe that part of the country would be depopulated. It is obſerved that all fogs are extremely unhealthy in thoſe parts, particularly before and after the rainy ſeaſons; but the above account of the *harmattans* appeared ſo very extraordinary and incredible to ſome of Dr. Lind's readers, that he thought proper to publiſh a further corroboration of the facts above mentioned.

"A gentleman (ſays he), who had long reſided at Cape Coaſt caſtle, informed me, that during the time of this fog, being in the upper chambers of the fort, the boards of the floor ſhrunk ſo much, that he could diſcern the candles burning in the apartments below him (there are no plaſter ceilings uſed in thoſe hot countries), and that he could then even diſtinguiſh what people were doing in the apartments below; the ſeams of the floor having opened above half an inch, while the fog laſted, which afterwards, upon its being diſpelled, became cloſe and tight as before."

In this country the rains and dews ſeem to be poſſeſſed of qualities almoſt equally pernicious with the fogs. This much is certain, that in Guinea, many of the principal negroes, and eſpecially of the mulatto Portugueſe, take the utmoſt precaution to avoid being wet with thoſe rains, eſpecially ſuch as fall firſt. At the ſetting-in of the rainy ſeaſon, they generally ſhut themſelves up in a cloſe well-thatched hut, where they keep a conſtant fire, ſmoke tobacco, and drink brandy, as preſervatives againſt the noxious quality of the air at that time. When wet by accident with the rain, they immediately plunge themſelves into hot water, if near it. Thoſe natives generally bathe once a-day, but never in the freſh water rivers when they are overflown with the rains: at ſuch times they prefer for that purpoſe the water of ſprings. The firſt rains which fall in Guinea are commonly ſuppoſed to be the moſt unhealthy. They have been known, in 48 hours, to render the leather of the ſhoes quite mouldy and rotten; they ſtain clothes more than any other rain; and ſoon after their commencement, even places formerly dry and parched ſwarm with frogs. At this time ſkins, part of the traffic of Senegal, quickly generate large worms; and it is remarked, that the fowls, which greedily prey on other inſects, refuſe to feed on theſe. It has been further

obſerved, that woollen cloths wet in thoſe rains, and afterwards hung up to dry in the ſun, have ſometimes become full of maggots in a few hours.—It is alſo probable, that as, in ſome of thoſe countries, the earth, for ſix or eight months of the year, receives no moiſture from the heavens but what falls in dews, which every night renew the vegetation, the ſurface of the ground in many places becomes hard and incruſtated with a dry ſcurf, which confines the vapours below; until, by the continuance of the rains for ſome time, this cruſt is ſoftened and the long pent-up vapours ſet free. That theſe dews do not penetrate deep into the earth is evident from the conſtant dryneſs and hardneſs of ſuch ſpots of ground, in thoſe countries, as are not covered with graſs and other vegetables. Thus the large rivers in the dry ſeaſon being confined within narrow bounds, leave a great part of their channel uncovered, which having its moiſture totally exhaled, becomes a ſolid hard cruſt; but no ſooner do the rains fall, than by degrees this long parched up cruſt of earth and clay gradually ſoftens, and the ground, which before had not the leaſt ſmell, begins to emit a ſtench, which in four or five weeks becomes exceedingly noiſome, at which time the ſickneſs is generally moſt violent.

This ſickneſs, however, is not different from the remitting fever which has been deſcribed under ſo many various forms and names. An inflammatory fever is ſeldom obſerved, during the ſeaſon of ſickneſs, in this part of the world; and we ſhall conclude our deſcription of the *amphimerina paludoſa* with ſome extracts from the ſurgeon's journal of a ſhip that ſailed up the rivers of Guinea.

"On the 5th of April we ſailed up the river of Gambia, and found all the Engliſh in the fort in perfect health. The ſurgeons of the factory informed me, that a relaxation of the ſtomach, and conſequently a weakened digeſtion, ſeemed to bring on moſt of the diſeaſes ſo fatal to Europeans in the ſickly ſeaſon. They were generally of a bilious nature, attended with a low fever, ſometimes of a malignant, at other times of a remitting kind.—On the 12th of April, after ſailing 30 miles up the river St. Domingo, we came to Catchou, a town belonging to the Portugueſe, in Lat. 20° N. In this town were only four white people, the governor and three friars. The number of whites in the trading ſhips were 51. One morning, towards the latter end of April, a little rain fell. On the 13th of May there was a ſecond ſhower, accompanied with a tornado. On the 18th of May it rained the whole day; and the rain continued, with but ſhort intervals, until the beginning of October.

"In the month of June, almoſt two-thirds of the white people were taken ill. Their ſickneſs could not be well characteriſed by any denomination commonly applied to fevers: it however approached neareſt to what is called a *nervous fever*, as the pulſe was

always low, and the brain and nerves seemed principally affected. It had also a tendency to frequent remissions. It began sometimes with a vomiting, but oftener with a delirium. Its attack was commonly in the night; and the patients, being then delirious, were apt to run into the open air. I observed them frequently recover their senses for a short time, by means of the heavy rain which fell upon their naked bodies. But the delirium soon returned: they afterwards became comatose, their pulse sunk, and a train of nervous symptoms followed; their skin often became yellow; bilious vomitings and stools were frequent symptoms. The fever reduced the patient's strength so much, that it was generally six weeks or two months before he was able to walk abroad. A consuming flux, a jaundice, a dropsy, or obstructions in the bowels, were the consequences of it. Of fifty-one white men, being the companies of four ships which were at Catchou, one-third died of the fever, and one-third more of the flux, and other diseases consequent upon it; and of these not one was taken ill till the rains began.

"I believe, on the whole face of the earth, there is scarce to be found a more unhealthy country than this during the rainy season; and the idea I then conceived of our white people was by making a comparison of their breathing such a noxious air, with a number of river-fish put into stagnating water; where as the water corrupts, the fish grow less lively, they droop, pine away, and many die.

"Thus some persons became dull, inactive, or slightly delirious, at intervals; and without being so much as confined to their beds, they expired in that delirious and comatose state in less than forty-eight hours, after being in apparent good health. The white people in general became yellow; their stomachs could not receive much food without loathing and retchings. Indeed it is no wonder that this sickness proved so fatal, that recoveries from it were so tedious, and that they were attended with fluxes, dropsies, the jaundice, ague-cakes, and other dangerous chronical disorders. It seemed more wonderful to me that any white people ever recover, while they continue to breathe so pestiferous an air as that at Catchou during the rainy season. We were, as I have already observed, thirty miles from the sea, in a country altogether uncultivated, overflowed with water, surrounded with thick impenetrable woods, and over-run with slime. The air was vitiated, noisome, and thick; insomuch that the lighted torches or candle burnt dim, and seemed ready to be extinguished: even the human voice lost its natural tone. The smell of the ground and of the houses was raw and offensive; but the vapour arising from putrid water in the ditches was much worse. All this, however, seemed tolerable, when compared with the infinite numbers of insects swarming every-

where, both on the ground and in the air; which, as they seemed to be produced and cherished by the putrefaction of the atmosphere, so they contributed greatly to increase its impurity. The wild bees from the woods, together with millions of ants, over-ran and destroyed the furniture of the houses; at the same time, swarms of cockroaches often darkened the air, and extinguished even candles in their flight; but the greatest plague was the musquettos and sand-flies, whose incessant buz and painful stings were more insupportable than any symptom of the fever. Besides all these, an incredible number of frogs on the banks of the river made such a constant and disagreeable croaking, that nothing but being accustomed to such an hideous noise could permit the enjoyment of natural sleep. In the beginning of October, as the rains abated, the weather became very hot; the woods were covered with abundance of dead frogs, and other vermin, left by the recess of the river; all the mangroves and shrubs were likewise overspread with stinking slime."

After so particular a description of the remitting fever, in many different parts of the world, we presume it will be needless to take notice of any little varieties which may occur in the warm parts of America, as both the nature and cure of the disease are radically the same: neither shall we lengthen out this subject with further descriptions of remitting fevers from the works of foreign authors, as, from what we have already said, their nature cannot well be mistaken.

Cure.] The great difficulty in the cure of remitting fevers arises from their not being simple diseases, but a complication of several others. Fevers, properly speaking, have but three or four different appearances which they can assume without a complication. One is, when they are attended with a phlogistic diathesis; another is, when they assume the form of genuine intermittents; a third is, when they produce a great debility of the nervous system; and the fourth is, when along with this debility there is also a rapid tendency to putrefaction. If, therefore, all these species happen to make an attack at once, the most dangerous fever we can imagine will be produced; and however contrary it may be to our theories to admit the possibility of such an attack, the truth of the fact is too often confirmed by fatal experience. In the beginning of remittent fevers, for instance, the symptoms indicate a high degree of inflammation: but if the practitioner attempts to remove this inflammation by blood-letting or other evacuations, the pulse sinks irrecoverably, and the person dies with such symptoms as show that the nervous system has been from the beginning greatly affected; at the same time the high stimulants and cordials, or the bark, which would have conquered the nervous part of the disease, increase the inflammatory part of it to such a degree, that by a too early exhibition of them the patient also dies, but after another manner.

In the remitting fever of the East Indies, Dr. Lind of Windsor

formed the following indications of cure: 1. To allay the violence of the fever. 2. To evacuate the putrid humours, and take great care to prevent the body from inclining to putrefaction. 3. To keep up the ſtrength of the patient as much as poſſible during the diſorder. 4. To loſe no time in preventing the return of the paroxyſms.

To allay the violence of the fever, every thing that can contribute to increaſe it ought to be carefully avoided or removed; ſuch as great heat, too ſtrong a light falling on the eyes, noiſe, and motion. If during the paroxyſm the head and loins be affected with violent pains, the pulſe be full and hard, and the heat intenſe, bleeding may be uſed, but with the greateſt caution: for, however uſeful this operation may be in cold climates, the ſucceſs of it in warm ones is ſo far from being certain, that the lives of the patients have been often very much endangered, nay even deſtroyed by it. Dr. Badenoch, and the ſurgeon of the Ponſborne, endeavoured each of them to relieve two patients by blood-letting: and the conſequence was, that each of them loſt one patient. Dr. Lind bled two patients; one of whom was Mr. Richardſon, the firſt mate of the ſhip, who complained of a moſt violent pain in his head, with a full hard pulſe. About four or five ounces of blood were taken from him, by which he was greatly relieved: nor was the cure retarded by it; nay, the fever afterwards became leſs irregular. At the time the other patient was bled, the diſeaſe was exceedingly frequent and violent. He was ſo earneſt for bleeding, that he fired all the reſt with the ſame deſire, ſwearing, that by refuſing them this only remedy, every one of them would be ſent to their graves. To quiet them, therefore, and get quit of their importunities, the doctor complied with their requeſt, and took about five or ſix ounces from him who had been the firſt to require it. The conſequence was, that he immediately loſt his ſtrength; and in leſs than an hour, during which time he made his will, was carried off by the next fit. It is neceſſary, however, to obſerve, and indeed, the doctor himſelf makes the obſervation, with regard to this patient, that he was bled at an improper time, namely, between the fits; whereas, had he been bled in the hot fit, it is poſſible he might have been relieved.

In ſupport of the advantages to be derived from bleeding under proper circumſtances, we have the authority both of Cleghorn and Pringle. As Dr. Cleghorn practiſed in a very hot country, his obſervations muſt in the preſent caſe have greater weight than thoſe of Pringle, who practiſed in a colder one. The former acquaints us, that if he was called in early enough, unleſs there was a ſtrong contra-indication, he always uſed to take away ſome blood from people of all ages; namely from robuſt adults, ten or twelve ounces; from others a ſmaller quantity, in proportion to their ſtrength and years. And further, if a violent head-ach, obſtinate delirium, and great heat or pains of the bowels, were urgent, the bleeding was

repeated within a day or two. By this ſeaſonable evacuation, he found the vehemence of all the paroxyſms ſomewhat diminiſhed: the apyrexies became more complete; the operation of emetics and cathartics rendered ſafer and more ſucceſsful; and the terrible ſymptoms which happened about the height of the diſtemper, ſuch as raving, *ſopor*, difficulty of breathing, inflammations of the abdominal viſcera, &c. were either prevented or mitigated. But if the fever had continued for ſome time before he was called, and the maſs of blood appeared to be too much melted down or inclined to a putrid diſſolution, he either abſtained from bleeding entirely, or took away a very ſmall quantity, though ſome importunate ſymptoms might ſeem to require a larger evacuation. As to the time of performing the operation, he acquaints us, that it is ſafe enough, except when the cold fit laſts or is ſoon expected, or while the ſkin is covered with critical ſweats; and that he uſually opened a vein in the beginning of the hot fit; by which means the ſick were relieved, the immoderate heat of the body, which is often productive of fatal effects, was diminiſhed, and the critical ſweats brought on ſooner and in greater abundance.

But though Dr. Lind found veneſection to be of ſuch pernicious tendency in his patients, cooling acidulated liquors were of the utmoſt ſervice, as they corrected the putrid humours, leſſened the heat and thirſt, and of courſe prevented the fever from arriving at ſo great an height as it would otherwiſe have done. Thoſe cooling liquors are the beſt which are made up with ſome farinaceous ſubſtance, as they moſt eaſily unite with our fluids. Foſſile acids too, and cryſtals of tartar, eſpecially the latter, are of conſiderable uſe, not only in this but in other fevers. The neutral ſalts, prepared with the juice of lemons, were likewiſe given with ſucceſs during the heat of the fever. They leſſen the nauſea, the fits become more regular, and the remiſſions more full; and they are particularly grateful when given in a ſtate of effervescence. The good effects of theſe draughts we are in a great meaſure to aſcribe to the antiſeptic quality of the fixed air extricated from them during the effervescence; of which we ſhall ſpeak more fully when treating of the typhous fever.

During the remiſſion, it is proper to evacuate the putrid humours by ſmall doſes of ipecacuanha, or rather tartar emetic (vide Formulæ, No. 1. and 2.) The latter indeed appears to be endowed with ſome kind of febrifuge virtue, which Dr. Cullen thinks is owing to its relaxing the febrile ſpaſm taking place in the capillary veſſels. But ſhould there appear ſymptoms of a topical inflammation in any of the abdominal viſcera, a thing which never happens unleſs the diſorder has been of ſome ſtanding, vomiting is to be avoided, and we are to depend upon purgatives alone for the putrid bile, which are always uſeful in the cure of this diſorder. But all acrid and ſtrong purgatives are to be carefully avoided, and only the mild

antiſeptic ones made uſe of, ſuch as cryſtals of tartar, tamarinds made up with manna, or the following uſed at many of the London hoſpitals:

(No. 19.) ℞ Inf. ſennæ ʒij.
Magneſ. vitr. ʒſs.
Syr. roſæ. ʒiij. M. f. Hauſt.

Dr. Percival has deſcribed the good effect which vegetable acids have in ſweetening putrid bile; whence it ſeems probable, that a liberal uſe of theſe acids would be much more ſerviceable than a repetition of any kind of purgatives. Though in theſe diſeaſes there is a great quantity of putreſcent bile collected in the body, yet it ſeems much more probable that this is the *effect* rather than the *cauſe* of the diſorder; and therefore, though we carry off the quantity collected ever ſo often, more of the ſame kind will ſtill be produced by the putreſcent diſpoſition of the other fluids, at the ſame time that the ſtrength of the patient muſt neceſſarily be diminiſhed by repeated evacuations, when it ought rather to be kept up by all poſſible means. We ought well to obſerve, however, that the mineral acids have not that property of ſweetening putrid bile which the vegetable ones have; and therefore the ſame relief will not be given by them which might reaſonably be expected from vinegar or lemon-juice.

In order to keep up the ſtrength of the patient, good food is abſolutely neceſſary. Dr. Lind allowed the ſick ſmall meſſes of panada made with boiled rice and barley mixed with currants or raiſins and prunes, ſeaſoned with ſugar and a little wine, eſpecially claret. During the paroxyſms, they had gruel made of flour and rice, with ſugar and the juice of acid fruit; and when the fit went off, a little wine was added to this mixture.

The ſhirts and bedding muſt be very often changed and well aired; their ſtools, and all filth and naſtineſs, are to be immediately removed; the places where they are lodged ſhould be well aired and frequently ſprinkled with vinegar; and, in the laſt place, the ſick muſt be exceedingly well nurſed. Bliſters, according to Dr. Lind, ſhould never be uſed till the fever has been of long continuance, or the ſpirits and pulſe of the patient have begun to flag. But here our author has implicitly followed Dr. Huxham, whoſe theory concerning the uſe of bliſters is now found to be erroneous. According to that celebrated author, bliſters are capable of doing conſiderable hurt in all caſes where there is a tendency to inflammation, by increaſing the motion of the fluids and the oſcillatory power of the veſſels, both of which are already too great. They are alſo improper, according to him, where there is a conſiderable tendency of the fluids to putrefaction; becauſe he ſuppoſes the ſalts of theſe flies to operate in the ſame manner with volatile alkalies, that is, by diſſolving and putrefying the blood ſtill farther. But Sir John Pringle has ſhown, that, in inflammatory fevers, as well

as thoſe of the putrid kind, both bliſters and volatile ſalts may be of ſervice; the latter, particularly, he hath experimentally proved to be ſo far from promoting putrefaction, that they are exceedingly ſtrong antiſeptics.

In the Eaſt Indies, Dr. Lind found it abſolutely neceſſary to exhibit the bark in large quantities, and as early as poſſible. By this method he not only ſecured the patient from the imminent danger of death to which he was expoſed at every fit, but likewiſe conquered thoſe obſtructions which were apt to enſue in the abdominal viſcera, and which are to be attributed to the continuance of the diſorder, and not to the bark employed to cure it. He always gave the bark during the ſecond remiſſion, as all his care was during the firſt to cleanſe the primæ viæ. He obſerves, however, that it is to no purpoſe to give the bark till the neceſſary purgations are over; but aſſures us, that it never fails, unleſs from the coming on of a vomiting or diarrhœa it cannot be taken in ſufficient quantities before the return of a paroxyſm. To prevent the medicine from vomiting or purging, he mixed a few drops of tincture of opium with every doſe of it. Half a drachm was given every half hour in ſome convenient vehicle, beginning as ſoon as the fever had conſiderably abated, and the pulſe was returned nearly to its natural ſtate; both which generally happened before the ſweats were over. An ounce of the bark was ſometimes found too little to check the fever, but an ounce and a half never failed. It muſt be continued daily in ſmall doſes till the patient has recovered ſtrength, and then a greater quantity muſt be given, eſpecially at the ſeaſon when the rivers overflow the country.

Dr. Pringle found the autumnal remittents in the Netherlands complicated with a great many inflammatory ſymptoms; for which reaſon it was generally found neceſſary to open a vein in the beginning. The vernal and later autumnal remitting fevers are accompanied with pleuritic and rheumatic pains from the coldneſs of the weather, and on that account require more bleeding. A phyſician unacquainted with the nature of the diſeaſe, and attending chiefly to the paroxyſms and remiſſions, would be apt to omit this evacuation entirely, and give the bark too ſoon, which would bring on a continued inflammatory fever. In theſe countries a vein may be ſafely opened either during the remiſſion or in the height of a paroxyſm; and our author alſo found good effects reſulting from bleeding in the hot fits of the marſh fever, even after it had almoſt come to regular intermiſſions. After bleeding, a purgative was uſually exhibited, of which he gives us the following formula.

(No. 20.) ℞ Infuſi ſennæ fol. ℥iij,
Elect. ſennæ ℥ſs,
Nitr. pur. ʒi.
Tinct. ſen. ʒvi. M. f. Hauſt.

Of this only one half was taken at once; and if it did not ope-

rate twice in four hours, the remainder was then taken. This potion agreed with the ſtomach, purged plentifully, and therefore was a very uſeful compoſition. Next morning, when there was almoſt always ſome remiſſion, he gave one grain of emetic tartar rubbed with 12 grains of crabs-eyes, and repeated the doſe in two hours, if the firſt had little or no effect; or at any rate in four hours. This medicine was intended not only to vomit, but alſo to operate by ſtool, and excite a ſweat. If theſe evacuations were procured, the fever generally became eaſier, and was even ſometimes cured. This he prefers to the ipecacuanha, and therefore in the latter years of his practice diſuſed that root entirely. The ſame medicine was repeated next day or the day following; or if not, a laxative clyſter was thrown in: and this method was continued till the fever either went off altogether, or intermitted in ſuch a manner as to be cured by the bark.

A ſimilar method was followed by Dr. Huck in the remitting fevers of the Weſt Indies and North America. In the beginning he let blood; and in the firſt remiſſion gave four or five grains of ipecacuanha, with from half a grain to two grains of emetic tartar. This powder he repeated in two hours, taking care that the patient ſhould not drink before the ſecond doſe; for then the medicine more readily paſſed into the bowels after it had operated by vomiting. If after two hours more the operation either way was ſmall, he gave a third doſe, which commonly had a good effect in opening the firſt paſſages; and then the fever either went quite off, or intermitted in ſuch a manner as to yield to the bark. On the continent he found little difficulty after the firſt intermiſſion; but in the Weſt Indies, unleſs he gave the bark upon the very firſt intermiſſion, though imperfect, the fever was apt to aſſume a continued and dangerous form.

In the remitting fevers of hot countries, however, it muſt be obſerved, that the lancet muſt in all caſes be much more ſparingly uſed than in ſimilar diſeaſes of the colder regions; and we muſt alſo be ſparing of veneſection in thoſe countries where the marſh effluvia are very ſtrong and prevail much. For this reaſon Dr. Lind of Haſlar greatly condemns the practice of indiſcriminate bleeding when people firſt arrive in hot climates. The firſt diſeaſes indeed which occur in a voyage to the ſouthward are for the moſt part of an inflammatory nature, and owing to a ſudden tranſition from cold to hot weather. This occaſions a fullneſs and diſtenſion of the veſſels; whence all Europeans on their firſt arrival under the tropic, bear evacuations much better than afterwards. The practice of indiſcriminately bleeding, however, a number of the ſhip's company when they firſt come into a warm latitude, is by no means found to anſwer the purpoſe of a preventive. In ſuch caſes, indeed, as plainly indicate a plethoric diſpoſition brought on by the heat, blood-letting is certainly uſeful. The ſigns of this are a pain and giddineſs in the head; a heavineſs and dulneſs of the

eyes, which ſometimes appear ſlightly inflamed: there is alſo commonly a ſenſe of weight and fulneſs in the breaſt, the pulſe at the ſame time being quick and oppreſſed.

But the caſe is quite different after a longer continuance of ſultry weather, and when the conſtitution is in ſome meaſure habituated to the hot climate. For it is then obſerved, that the ſymptoms of inflammation in the bowels, even the moſt dangerous, are not near ſo ſevere in ſuch climates as in cold countries; nor can the patients bear ſuch large evacuations. The phyſician, however, muſt take care not to be miſled by the apparent mildneſs of the ſymptoms: for he will find, notwithſtanding ſuch deceitful appearances, that the inflammation makes a more rapid progreſs in hot countries than in cold, ſuppurations and mortifications being much more ſuddenly formed; and that in general all acute diſeaſes come ſooner to a criſis in the ſouthern than in colder regions. Hence it is an important rule of practice in thoſe climates, to ſeize the moſt early opportunity, in the commencement of all threatening inflammations, to make frequent, though not copious, evacuations by blood-letting. For by delay the inflammation quickly paſſes from its firſt to its laſt or fatal ſtage; at leaſt an imperfect criſis in ſuch inflammatory fevers enſues, which fixes an obſtruction in the viſcera extremely difficult to remove.

It is indeed a general maxim with ſome phyſicians in the Weſt Indies, that in moſt acute diſeaſes bleeding in that country is prejudicial. This is founded upon a ſuppoſition that the craſſamentum of the blood is thinned, and the ſolids greatly weakened, by the heat of the climate. It is therefore objected, that bleeding in ſuch an habit of body weakens the powers of nature, and withdraws the ſtrength which is requiſite to ſupport the patient until the criſis of the fever.

This reaſoning is partly juſt; but, like all general maxims, will admit of exceptions. Firſt with regard to ſailors, it is to be remembered, that they are more expoſed to quick viciſſitudes of heat, cold, damps, and to various changes of the air and weather, than moſt of the other inhabitants of the Torrid Zone. Add to this, that their intemperance, and the exceſſes they are apt to fall into whenever it is in their power to commit them, render them more liable to inflammations than any other ſet of people. Hence their diſeaſes require more plentiful evacuations than the land-inhabitants of thoſe parts of the world, and generally they bear them better. But with regard to the natives of the country, or thoſe who have remained long there, it muſt be proper to bleed them very ſparingly, making a ſmall allowance for the different ſeaſons of the year, the temperature of the air, and the ſituation of the places where they reſide. Thus, in ſome parts, even on the iſland of Jamaica, at particular ſeaſons, the weather is cool; wherefore, in theſe places, and at ſuch ſeaſons, the inhabitants having

their fibres more rigid, and a firmer crasis of their blood, bear veneseˆction much better.

In cold countries the state of the air greatly assists in restoring the impaired spring of the fibres; whereas every thing almost in warm weather, such as heat, moisture, &c. concur to relax and weaken the habit of body. Thus we may daily see persons in Britain, after having suffered a most severe fit of sickness, recover their strength and spirits in a few days, and in a very short time their natural constitution. But the case is very different in the sultry regions of the torrid zone, or indeed in any part of the world where the heat of the season causes the mercury to stand for any length of time at the 77th degree and upward of Fahrenheit's thermometer. During such an excess of heat, debility after fevers is apt to remain with European constitutions for several months. In Jamaica the convalescents are sent to the cool summits of the mountains; but a retreat to a more northern climate is often absolutely necessary to recover their wonted tone and vigour of body. It is a well-established observation, that the negroes and aborigines of the torrid zone cannot bear plentiful evacuations by the lancet. They commonly mix the most stimulating poignant spices with their ordinary light food, and this is found by experience suitable to their constitutions.

As proper preventives for the dangerous fevers of which we are treating, Dr. Lind on all occasions recommends the avoiding of stagnant water, or putrid marshes; the use of proper food, cleanliness, and sobriety. Of the propriety of removing from the neighbourhood of those places whose pestilential effluvia produce the disorders, we cannot possibly entertain a doubt; and of the efficacy of proper food in preventing putrid disorders he gives a remarkable instance in the Sheerness man-of-war, bound to the East Indies. As they went out, the men being apprehensive of sickness in so long a voyage, petitioned the captain not to oblige them to take up their salt provisions, but rather to permit them to live upon the other species of their allowance. It was therefore ordered, that they should be served with salt-meat only once a-week; and the consequence was, that, after a passage of five months and one day, the ship arrived at the Cape of Good Hope without having a single person sick on board. As the use of Sutton's pipes had been then newly introduced into the king's ships, the captain was willing to ascribe part of such an uncommon healthfulness to their beneficial effects; but it was soon discovered, that by the neglect of the carpenter, the cock of the pipes had been all this while kept shut. She remained in India some months, where none of the men, except the boat's crew, had the benefit of going on shore; notwithstanding which, the crew continued to enjoy the most perfect state of health; they were, however, well supplied with fresh meat. On leaving India, knowing they were to stop at the Cape

of Good Hope, and truſting to a quick paſſage, and the abundance of refreſhments to be had there, they eat their full allowance of ſalt-meats, during a paſſage of only ten weeks; and it is to be remarked the air pipes were now open. The effect of this was, that when they were at the Cape, twenty of them were afflicted in a moſt miſerable manner with ſcorbutic and other diſorders. Theſe, however, were ſpeedily recovered by the refreſhments they met with on ſhore. Being now thoroughly ſenſible of the beneficial effects of eating, in theſe ſouthern climates, as little ſalt meat as poſſible when at ſea, they unanimouſly agreed, in their voyage home from the Cape, to refrain from their too plentiful allowance of ſalt fleſh. And thus the Sheerneſs arrived at Spithead, with her full complement of 160 men in perfect health, and with unbroken conſtitutions; having in this voyage of 14 months and 15 days buried but one man, who died in a mercurial ſalivation.

Thus we ſee that a free and pure air is not a ſufficient preſervative againſt a putreſcent ſtate of the fluids, without proper food; and, on the other hand, we have a remarkable inſtance of the inefficacy of the moſt ſalutary food to prevent putrid diſeaſes in a very noxious ſtate of the atmoſphere. In the year 1717, at the ſiege of Belgrade, in Hungary, the fever of the country, and the flux, occaſioned a moſt extraordinary mortality among the troops. The dread of theſe diſeaſes cauſed every one, as may naturally be ſuppoſed, to have recourſe to different precautions for ſelf-preſervation. Prince Eugene, the commander in chief, had water and the proviſion for his table ſent him twice a-week from Vienna. The pure ſtream of the river Kahlenberg was regularly brought to him: he avoided all exceſſes, and lived regularly, or rather abſtemiouſly; refreſhed himſelf often by eating a cool melon; and mixed his uſual wine, which was Burgundy, with water. Yet notwithſtanding his utmoſt care, he was ſeized with a dyſentery; which would have quickly put an end to his life, had not the ſpeedy concluſion of that campaign permitted him to make a quick retreat.

At this unhealthy ſeaſon, when hardly one imperial officer, much leſs their ſeveral domeſtics, eſcaped thoſe malignant diſeaſes, the renowned Count Boneval and his numerous retinue continued in perfect health, to the ſurpriſe, or, to uſe the words of Dr. Kramer, to the *envy*, of all who beheld him. The only preventive he uſed to take, was, two or three times a-day, a ſmall quantity of brandy in which the bark was infuſed; and he obliged all his attendants and domeſtics to follow his example. It is no leſs remarkable that the count, placing his certain preſervation in the uſe of this ſingle medicine, lived for many years afterwards in the moſt unhealthy ſpots of Hungary, without any attack or apprehenſion of diſeaſe; and continued to enjoy a perfect ſtate of

health during the hotteſt and moſt ſickly ſeaſons. And thus, with an unbroken and ſound conſtitution, which is ſeldom the caſe of thoſe who reſide long in ſuch climates, he lived to a great age. There is an inſtance produced by the ſame author of a whole regiment in Italy having been preſerved by the uſe of the bark from the attack of theſe malignant diſeaſes, viz. the flux, and the *bilious* fever as it is frequently called, when the reſt of the Auſtrian army, not purſuing that method, became greatly annoyed with them.

The intemperance and irregular living of thoſe Europeans who viſit the hot climates is frequently accuſed as the cauſe of their deſtruction; but, our author thinks, without ſufficient reaſon: for though intemperance will make the body more liable to receive ſuch diſeaſes, it will not bring them on. It muſt by no means, however, be imagined, that in theſe climates Europeans may with impunity be guilty of exceſſes in eating or drinking; for the leaſt error in that way will often prove fatal by debilitating the body, whoſe utmoſt ſtrength in time of full health was perhaps ſcarce ſufficient to reſiſt the peſtilential miaſmata of the atmoſphere.

It appears, therefore, from the concurrent teſtimony of the moſt eminent phyſicians, that the moſt proper medicine to be uſed, either as a preventive or cure, for remitting or intermitting diſorders, is the Peruvian bark, adminiſtered with proper precautions, and after the *primæ viæ* have been evacuated of the putrid bilious matter collected in them. In thoſe ſpecies of *tritæophya*, &c. belonging to this claſs, enumerated by Sauvages, the ſame remedies alone were uſeful; but in that peſtilential diſtemper which he calls *Tritæophya Vratiſlavienſis*, he tells us that waſhing the body with water ſometimes hot, ſometimes cold, watery clyſters, and plenty of aqueous drink, were likewiſe of uſe.

We ſhall conclude this ſubject with ſome obſervations made by Dr. Fowle, in his Treatiſe on Fevers in the Weſt Indies.

Dr. Fowle divides the fevers of the Weſt Indies into intermittents, remittents, ardent fever, and the malignant or gaol fever. On the diagnoſtic ſymptoms of theſe varieties of fever, he aſſiſts the reader by bringing together what has been diffuſed in his former chapters concerning the different ſituations, ſeaſons of the year, and prediſpoſitions, which conduce to the production of the various fevers.

"We may obſerve," ſays he, "that the ardent fever requires a certain degree of firmneſs of fibre: it reigns moſt commonly at that period of the year when the ſky is clear; when the atmoſphere ſeems little, if at all, loaded with vapour; and when the heat is great. The objects of its attack are the ſtout and athletic, young or middle aged men, or women who in their conſtitutions and habits nearly reſemble them, and thoſe who have lately arrived either from Europe or North America, or from the more moun-

lainous situations in the West Indies themselves. It is prevalent in the dry sandy bays, and is often induced by persons who have been much heated being suddenly exposed to cold.

"The remitting fever, on the contrary, seems to require a previously debilitated body: it is most frequent at those periods of the year, when, the ground having been supersaturated by the rains, the whole atmosphere becomes loaded with noxious vapour. Persons who have lived for some time in the West Indies are by no means free from its power, and women and children suffer severely from it, as do also those who have been debilitated by previous illness or long-continued fatigue. It delights in the low swampy marshes, in the neighbourhood of lagoons, in uncultivated situations, where the currents of air are impeded, and on the smaller hills which are subject alternately to the swampy vapours, and the cold storms.

"The gaol fever is seldom to be met with except on board of ships or in crowded towns, or in individuals who have been exposed to the contagion of such places.

"This recapitulation may lead us to a very important point of practice; it may teach us to be very minute in our enquiries into the former manner of living of our patient, and also into his previous residence and other circumstances: for it must appear to be the height of imprudence to bleed a man profusely, and to have recourse to other violent evacuations, to a very great extent, though he should be young, in appearance robust, and attacked in a dry hot situation, when we might find, by a more minute enquiry, that this man has, for weeks previous to his illness, been undergoing immense fatigue, in situations too the most exposed to swampy vapours, and perhaps with but spare diet and little sleep. Nor is this supposing a case merely for the sake of illustration; the thing itself is continually occurring. Small detachments from regiments are frequently sent not only from one part of an island to another, but also to different islands; soldiers thus detached are very apt to be seized with fevers, not only from change of air, which I have before asserted to be a very frequent exciting cause, but also from having greater opportunities of obtaining spirits: The danger of following this evacuating plan in one who has been exposed to the influence of contagion must be still more evident.

"On the contrary, where the patient happens to be attacked soon after he comes into the neighbourhood of swampy soils, not having before been exposed to any debilitating causes, we surely may be more free in our evacuations, than in a more weakened person, or one who had been a longer resident.

"We may observe that the mode of attack differs considerably in the three fevers. While the gaol fever is commonly preceded, for some hours, often for a day or two, by languors and

tranſient alternations of chills and fluſhes, and the remitting has *rigor*, generally ſtrong but always ſufficiently evident, the ardent fever commonly makes its attack of a ſudden, and with little or no *rigor*, and the patient, from being in apparent ſound health, is hurried inſtantly into the midſt of diſeaſe. The proſtration of ſtrength alſo, though very great both in the remitting and typhus, yet bears no proportion to that in the ardent: the pain in the head, back, and limbs, is conſiderable in all, but in the ardent there is moſt commonly a violent pain in the middle of the thighs. The pain alſo of the head is different in the various fevers: in the ardent, it is principally fixed over the orbit of each eye, while there is only a dull heavy pain over the reſt of the head; in the remitting, the pain is violent and continued over the whole head; while in the gaol fever it ſeems rather to be a ſucceſſion of pulſations, giving an idea to the patient that his head is forcibly opening and ſhutting. There is little vomiting, except juſt in the early attack of gaol fever; but in both the others, it is a troubleſome and dangerous ſymptom: in the remitting, there is generally a quantity of bile thrown up, frequently of a green colour, but this ſeldom or never happens in the ardent. So conſtantly indeed is this the caſe, that where bile is vomited up, and there has been ſenſible *rigor*, I ſhould have ſcarcely any doubt in pronouncing the fever not to be of the ardent type: and there is alſo in the latter a ſenſation of burning at the pit of the ſtomach.

"The countenance in the gaol fever is commonly, although ſlightly, ſuffuſed, yet of a dirtyiſh hue, and by no means tumid, and there is commonly violent pulſation of the carotid arteries. In the remitting, after the hot fit is formed, the ſuffuſion is great, but the tumour by no means ſo evident, particularly about the fauces and neck, as in the ardent. The mode of ſpeaking is very different: in this, it is confuſed and thick; in the remitting, it varies only from health in a quickneſs, owing to the anxiety of the patient, not to any particular debility of the organs of ſpeech; and in the gaol fever it is generally a quickneſs of ſpeech for a word or two, rather as if from impatience at being diſturbed, or elſe it is plaintive and querulous. Neither in the remitting nor typhus has the patient any of that appearance as of intoxication, which is frequently to be obſerved in the ardent fever.

"The tongue in typhus is generally very tremulous when put out: it is from the beginning furred, and ſoon becomes dry and chapped; and, towards the latter ſtages of the diſeaſe, the tongue and lips are covered with black and looſe ſaburra, floating like cobwebs, or they have a number of apthæ over their ſurface. In the remitting, the tongue is furred, but in no degree; and, as the diſeaſe advances, this fur becomes brown, but there is in general ſome moiſture on it to the laſt. In the ardent fever the tongue has no fur upon it; on the contrary, we may call it morbidly clean: it

is rather moiſt, and of a bright red colour: as the diſeaſe advances, it ſometimes becomes dry, at others not ſo, but always continues clean. The thirſt is not ſo great as we might be led to expect in this fever, from the vehemence of the ſymptoms, neither is it in any proportion to what is felt in the others. In this fever alſo, while the proſtration of ſtrength is very great, the vomiting, burning heat of the ſtomach, and reſtleſſneſs, are violently urgent, and the heat of the ſkin intenſe. The pulſe varies very inconſiderably, either in ſtrength or quickneſs, from its natural ſtate, but in the other fevers, it is amongſt the firſt ſymptoms to ſhew a derangement of the ſyſtem.

"The delirium is very different alſo: in the ardent fever, it is of the moſt fierce kind. The patient generally imagines himſelf in the preſence of his moſt bitter enemies, who are either attacking him, or whom he is endeavouring to attack; the eye-balls are ſtrained, the whole countenance puts on the moſt terrific aſpect, and it often requires two or three perſons to hold him in his bed. The delirium in the remitting is ſeldom ſo fierce; it is generally mild, the imagination of the patient buſying itſelf with his former occupations and purſuits: while that of typhus ſeems ſcarcely to amount to more than a want of power of attention in the ſick perſon to any thing about him; for during the time he is uttering the moſt incoherent nonſenſe; if he be rouſed, he gives a rational anſwer, but immediately relapſes into his incoherent fit."

The author conſiders theſe the ſymptoms which are moſt diſſimilar in the different fevers; and has purpoſely omitted the yellowneſs of the ſkin, the black vomit, and the hæmorrhages from different parts of the body, as he ſays he has ſeen them occur in every ſpecies of fever in the tropical climates.

Genus II. QUARTANA; the Quartan Fever.

Quartana auctorum, *Sauv.* Gen. 89. *Lin.* 17. *Vog.* 3. *Sag.* 711. *Hoffm.* II. p. 23. *Junck.* tab. 81.

The *Genuine* Quartan. Sp. I. var. 1. A.

Quartana legitima, *Sauv.* ſp. 1. *Sydenham* de morb. acut. cap. v.

1. *Deſcription.*] The genuine quartan, according to Juncker, keeps its form more exactly than other intermittents; ſcarcely coming on at any other time than four or five in the afternoon. The cold is leſs violent than in the tertian; but is very perceptible, though it doth not proceed to ſuch a height as to make the limbs ſhake; and continues for about two hours. It is preceded and accompanied by a languor both of body and mind. There is ſeldom any vomiting unleſs when the ſtomach is manifeſtly overloaded with aliment; neither is there any diarrhœa, but the belly

in general is rather bound, not only on the days on which the paroxyſm takes place, but alſo on the intermediate ones. The heat, which ſlowly ſucceeds the cold, is leſs troubleſome to the patient by its violence than by the uneaſy dryneſs of the ſkin, which is ſcarce ever moiſtened with ſweat. This heat rarely continues longer than four or ſix hours, unleſs perhaps at the firſt or ſecond paroxyſm. It is accompanied alſo with a giddineſs and dull pain of the head. On the termination of the paroxyſm, the patient returns to a middling ſtate of health, and continues in the ſame for the reſt of the intermediate days; only there remains ſomewhat of a loathing, and a deep-ſeated pain as if the body was all over bruiſed or broken, which kind of ſenſation the phyſicians are uſed to call *oſteocopus*. The fit always returns every fourth day, and that preciſely at the ſame hours, being rarely poſtponed.

2. *Cauſes of, and perſons ſubject to, this diſorder.*] The ſame general cauſes concur in producing this as in other intermittents, namely marſh miaſmata, and whatever can diſpoſe the body to be eaſily affected by them. Studious people, and thoſe of a melancholic turn, are ſaid to be particularly ſubject to quartans; but what are the immediate cauſes which produce a return of the fits every fourth day, inſtead of every day, or every third day, muſt probably lie for ever concealed, as depending upon the ſecret and inexplicable mechaniſm of the human body.

3. *Prognoſis.*] A ſimple quartan, where there is no reaſon to dread any induration of the viſcera, may very certainly admit of a cure; and the prognoſis can never be unfavourable, unleſs in caſes of extreme weakneſs, or where the diſeaſe hath been unſkilfully treated.

4. *Cure.*] This does not in the leaſt differ from that which hath been fully laid down for the ſimple tertian, and which it is therefore needleſs to repeat here.

The *Duplicated* QUARTAN. Sp. I. var. B.

Quartana duplicata, *Sauv.* ſp. 4. *Bonet.*

This is entirely ſimilar to the duplicated tertian already mentioned; proper allowance given for the difference between the type of a tertian and quartan.

The *Triplicated* QUARTAN. Sp. I. var. 1. C.

Quartana triplicata, *Sauv.* ſp. 16.

This hath three paroxyſms every fourth day, while the intermediate days are entirely free from fever.

The *Double* QUARTAN. Sp. I. var. 1. D.

Quartana duplex, *Sauv.* ſp. 3. *Vog.* ſp. 13.

In the double quartan, the fit comes on every day except the third; but so that the first paroxysm answers to the third, the second to the fourth, and so on.

The *Triple* QUARTAN. Sp. I. var. 1. E.

Quartana triplex, *Sauv.* Sp. 5. *Vog.* sp. 14. *Bartholin.* H. anat. c. 1. 95.

This comes on every day, but the quartan type is still preserved by the times of accession; that is, the time of the fourth paroxysm's coming on answers to that of the first, fifth to the second, the sixth to the third, &c.

The QUARTAN, accompanied with *Symptoms* of other diseases. Sp. I. var. 2.

Quartana cataleptica, *Sauv.* sp. 7. *Bonet.* polyalth. vol. 1. p. 805.

Quartana comatosa, *Sauv.* sp. 15. *Werhelf.* de febr. *C. Pisonis* Observ. de morbis a colluvie serosa, obs. 166, 167, 168, 169, 171, 172, 173, 174.

Quartana epileptica, *Sauv.* sp. 8. *Scholzii* Conf. 379, 380.

Quartana hysterica, *Sauv.* sp. 10. *Morton.* Pyret. exerc. 1. cap. ix. H. 10, 11.

Quartana nephralgica, *Sauv.* sp. 9.

Quartana metastatica, *Sauv.* sp. 17.

Quartana amens, *Sauv.* sp. 12. *Sydenham* de morb. acut. cap. v.

Quartana splenetica, *Sauv.* sp. 2. *Etmuller*, Coll. consult. cas. 25.

The QUARTAN *complicated* with other *diseases*. Sp. I. var. 3.

Quartana syphilitica, *Sauv.* sp. 6. *Plateri*, observ. L. III. p. 676. Edin. Ess. art. xlvii. obs. 8.

Quartana arthritica, *Sauv.* sp. 11. *Musgr. de Arthr.* sympt. cap. ix. H. 4. et 5.

Arthritis febrisequa, *Sauv.* sp. 10.

Arthritis febricosa, *Sauv.* sp. 10. *Werhelf.* de febr. *Cockburn* de morbis navigantium, obs. 19.

Quartana scorbutica, *Sauv.* sp. 14. *Barthol.* de med. Dan. diss. iv. *Tim.* L. VIII. cas. 18.

The *Remitting* QUARTAN. Sp. II.

Tetartophya, *Sauv.* gen. 85. *Sag.* 699. *Lin.* 21.

Quartana remittens auctorum.

Var. 1. Tetartophya simplex, *Sauv.* sp. 1.

2. Amphimerina semiquartana, *Sauv.* sp. 23.

3. Tetartophya semitertiana, *Sauv.* sp. 5.

4. Tetartophya maligna, *Sauv.* sp. 6. *Lautter.*

Hiſt. med. caſ. 21. *M. Douat.* L. III. cap. 14. ex *M. Gattenaria Horſt.* L. I. obſ. 15.

5. Tetartophya carotica, *Sauv.* ſp. 4. *Werholf.* de febr. *Bianchi* Hiſt. hep. pars III. conſt. ann. 1718, p. 751.
6. Tetartophya ſplenalgica, *Sauv.* ſp. 2.
7. Tetartophya hepatalgica, *Sauv.* ſp. 3. *Car. Piſ.* in prefat. p. 33.
8. Amphimerina ſpaſmodica, *Sauv.* ſp. 16.

To the tertian or quartan fevers alſo belong the *Erraticæ* of authors. As all thoſe above mentioned differ only in the ſlight circumſtance of the type from the intermitting and remitting tertians already deſcribed at length, it is unneceſſary here to take up time in deſcribing every minute circumſtance related by phyſicians concerning them, eſpecially as it could contribute nothing towards the laying down a better method of cure than what hath been already ſuggeſted.

GENUS III. QUOTIDIANA; the QUOTIDIAN FEVER.

Quotidiana auctorum, *Sauv.* gen. 86. *Lin.* 15. *Vog.* I. *Hoffm.* II. 33 *Junck.* tab. 79.

The *Genuine* QUOTIDIAN. Sp. 1. var. 1. A.

Quotidiana ſimplex, *Sauv.* ſp. 1.

Quotidiana legitima, *Sennert.* de febr. cap. 18.

1. *Deſcription.*] This kind of fever generally comes on about ſix or ſeven o'clock in the morning, beginning with a conſiderable degree of cold and ſhivering, which laſts for about an hour; and is often accompanied with vomiting, or ſpontaneous diarrhœa, or both. It is ſucceeded by a pretty ſtrong heat, accompanied with thirſt, reſtleſſneſs, and pain of the head. When the heat abates a little, a ſpontaneous ſweat commonly follows, and the whole paroxyſm rarely exceeds ſix hours. It returns, however, every day almoſt always at the ſame hour, unleſs it be evidently diſturbed.

2. *Cauſes of, and perſons ſubject to, the diſeaſe.*] The ſame general cauſes are to be aſſigned for the quotidian as for other intermittents. This kind occurs but rarely; and is ſaid to attack people of a phlegmatic temperament rather than any other: alſo old people rather than young, and women rather than men.

The prognoſis and method of cure are not different from thoſe of tertians and quartans.

The *Partial* QUOTIDIAN. Sp. 1. var. 1. B.

Quotidiana partialis, *Sauv.* ſp. 16. *Conoffel,* E. N. C. D. I. A. III. obſ. 205. Edin. Med. Eſſ. vol. i. art. 31. vol. ii. art. 16.

Quotidiana cephalalgica, *Sauv.* ſp. 6. *Mort.* pyretol. exerc. i. hiſt. 27. *Van Swieten in Boerh.* p. 534.

Cephalalgia intermittens, *Sauv.* ſp. 7.
Cephalæa febricoſa, *Sauv.* ſp. 4.
Quotidiana ophthalmica, *Morton*, ibid. hiſt. 17. *Van Swieten*, ibid.
Ophthalmia febricoſa, *Sauv.* ſp. 23.

Theſe diſorders attack only ſome particular part of the body, as the head, the eye, arm, &c. producing periodical affections of thoſe parts returning once in twenty-four hours; and are to be cured by the bark, as other intermittents. They are known to belong to this claſs, by the evident intermiſſion of the pain or other affection of the part. The *quotidiana hyſterica. Sauv.* ſp. 3. *quotidiana catarrhalis, Sauv.* ſp. 9. and *quotidiana ſtrangurioſa, Sauv.* ſp. 11. ſeem to be ſymptomatic diſorders.

The *Remitting* QUOTIDIAN. Sp. II.

Amphimerina, *Sauv.* gen. 84. *Lin.* 20.
Quotidiana continua, *Vog.* 15.
Quotidianæ remittentes et continuæ auctorum.
Amphimerina latica, *Sauv.* ſp. 1.
Febris continua lymphatica, *Etmuller*, Coll. conſ. caſ. 32. *River.* Obſ. cent. 1. obſ. 57.
Amphimerina ſingultuoſa, *Sauv.* ſp. 14.
Febris continua Lyngodes, *Vog.* 26.

Concerning theſe alſo nothing remains neceſſary to be mentioned in this place, having already ſo fully diſcuſſed the remitting fevers in all the different parts of the world. Many other varieties of theſe fevers mentioned by authors are merely ſymptomatic.

As it is univerſally conjectured that intermittent fevers ariſe from *marſh miaſmata*, we cannot render the reader a greater ſervice, perhaps, than by annexing to this ſection a moſt ingenious enquiry into the cauſes of the inſalubrity of flat and marſhy ſituations; together with his directions for preventing or correcting their effects, by Mr. William Currie, which have appeared in the Tranſactions of the American Philoſophical Society.

"That flat and marſhy ſituations are unfavourable to health, and that intermittent and remittent fevers, with bilious evacuations, are particularly prevalent in ſuch ſituations during the ſeaſon of autumn, in temperate climates as well as within the tropics, has been remarked by phyſicians and hiſtorians in every age.

"But although they have agreed with reſpect to the fact, they have differed materially with reſpect to the cauſe of this.

"A deſire of aſcertaining the true cauſe of this inſalubrity induced me to engage in the enquiry which I am now about to ſubmit to this reſpectable ſociety; and I hope the time and attention which

I have beſtowed upon a ſubject ſo intereſting to mankind, will not be deemed labour miſemployed.

"The atmoſphere in ſalutary ſituations has been demonſtrated, by M. Lavoiſier and his colleagues, to be a compound body, conſiſting of two diſtinct gaſes or aëriform fluids, the one called azote or nitrogen gas, and the other oxygen gas or pure reſpirable air; and that in one hundred parts of the atmoſphere, the proportions of theſe gaſes are 72 of the azote and 28 of oxygen, or as three to one.

"From Mr. Vanbreda's experiments, on the atmoſphere of marſhes in the autumnal ſeaſon, which he ſubjected to the common teſt of nitrous air in the eudiometer, it appears that theſe proportions were very different; there being but 14 or 15 parts of oxygen to 84 or 85 of azote, but that the bulk was ſupplied, and the ſame weight preſerved, by a certain quantity of carbonic gas or fixed air, and a ſmall portion of hydrogen and ammoniacal gaſes or aëriform fluids.

"All theſe gaſes are the effects of vegetable and animal putrefaction, and muſt be derived from the ſoil, or the vegetable and animal ſubſtances connected with the ſoil.

"The ſoil of marſhes is compoſed entirely of vegetable and animal ſubſtances, which have undergone the proceſs of putrefaction, and conſiſt principally of vegetable earth, carbon or charcoal and nitre, mixed with more or leſs calcareous and argillaceous earth, and by diſtillation affords oil, hydrogen, and azote.

"From this ſoil, and from the various vegetable and animal ſubſtances mixed with it, and conſtantly putrefying in hot weather, it has been ſuppoſed miaſmata iſſue, which give origin to the diſeaſes peculiar to marſhy ſituations; and as there are no ſubſtances but thoſe gaſes, already enumerated, which can be diſcovered to iſſue from a marſhy ſoil, or from putrefying vegetable or animal ſubſtances, if thoſe diſeaſes depend upon miaſmata or effluvia, theſe miaſmata muſt conſiſt of one or more of the gaſes enumerated*.

* In the vinous fermentation, part of the principles of the vegetable ſubſtance, viz. the hydrogen, remains united with a portion of water and of carbon to form the alkohol.

"In the acetous fermentation, a union takes place between the oxygen and the alkohol, and earthy matter is depoſited. In other words, the baſe of the pure air abſorbed, uniting with the alkohol of the liquor, and the eſſential ſalts diſſolved in it, forms vinegar, while a depoſition takes place of earthy or oily matters no longer ſoluble in the liquor. Hence vinegar is in an intermediate ſtate between wine and fixed air, accordingly vinegar may be made by impregnated alkohol and water with fixed air.

"The gas of fermenting liquors, which is fixed air, holding ſome ſpirit of wine in ſolution received into water, has the ſame effect.

"In order to determine this matter, it will be neceſſary to enquire into the effects which theſe ſubſtances, ſingly, or combined, uſually produce on the living human body.

"If the carbonic gas, or fixed air, when applied in a certain quantity, or in a concentrated ſtate, deſtroys life inſtantly by its action on the irritability of the muſcular fibres of the heart, as from the obſervations of Meſſrs. Prieſtley, Bergman, Fontana, Cavallo, and other philoſophers of credit, appears to be the caſe, nothing is more probable than that a leſs quantity, though much weakened by diffuſion in, and mixture with, the atmoſpheric air, would operate in a ſimilar manner, though in a leſs degree, and occaſion a diſeaſe of a paralytic or inſenſible kind, and not an intermittent or remittent, ſince in theſe laſt, the ſenſibility and irritability are manifeſtly increaſed.

"That the hydrogen gas or inflammable air has little or no ſhare in the generation of the diſeaſes under conſideration, is rendered evident by the experiments of Chaptal, De Roſier, and Beddoes.*

"The former aſſures us, that he inſpired it ſeveral times, without perceiving any effect from it, and that it returned from his lungs without any alteration either in weight, bulk, or quality, whereas common atmoſpheric air ſuffers a very material change by reſpiration, its pure or oxygenous portion being abſtracted, and the remainder rendered incapable of ſupporting flame, and unfit for reſpiration.

"De Roſier not only inſpired inflammable air, but applied flame to it as he diſcharged it through his noſtrils, without receiving any injury from it. He alſo diſcharged the burning gas from his mouth through a tube, ſo that he appeared to breathe flame.—No detonation took place in his mouth, becauſe he had diſcharged all the atmoſpheric air from his lungs, before he inſpired the inflammable air.

"Dr. Beddoes prevailed on a ſtout florid young woman to inſpire hydrogen for two minutes, without any perceptible effect, except a ſlight giddineſs after ſhe had deſcended a flight of ſtairs.

"No alteration is made in their properties by the mixture of carbonic with hydrogenous gas. No decompoſition takes place, no caloric is ſet at liberty, or heat rendered ſenſible of ſuch union.

"In the putrid fermentation (which is the only ſpecies that takes place in marſhes), the whole of the hydrogen is diſſipated, under the form of inflammable gas, while the oxygen and the carbon uniting, with the caloric or principle of heat, eſcapes under the form of fixed air;" after this proceſs, if there has been ſufficient water and heat to complete the putrefactive proceſs, nothing remains but the earth of the vegetable, mixed with a little carbon and iron. CHAPTAL.

* It appears from the experiments of M. Lavoiſier, that hydrogen is alſo the reſult of decompoſed water; and that water is a compoſition of hydrogen and oxygen kept in a fluid ſtate by its union with caloric, and conſiſts of 85 parts in 100 of oxygen and 15 of hydrogen.

"We may, therefore, from what has now been ſtated, conclude, that neither carbonic nor hydrogen gas, ſingly or combined, is the miaſma or effluvium by which the diſeaſes in queſtion are produced.

"In conſequence of the putrefaction of farinaceous plants, and all ſuch as abound more in gluten than in the ſaccharine, or mucilaginous principles, as well as from the putrefaction of animal ſubſtances, an ammoniacal gas is produced, owing to the union of the hydrogen, evolved in the putrefactive fermentation, with the ſuperabundant azote of the atmoſphere*. But this gas, inſtead of diminiſhing the powers of the human body, is well known to have a contrary effect, except when received into the lungs in a large quantity, and then it proves deſtructive from its ſtimulating quality, inducing a ſpaſm on the glottis or bronchiæ. That neither the water of marſhes, nor the exhalations which ariſe from thence, are ſeptic or promoters of putrefaction, has been fully demonſtrated by the experiments of Dr. Alexander†.

"But that any exhalation, or other ſubſtance, ſhould act on the moving powers or ſolids of the human body ſeveral days after it has been received into the body, without making ſome material change in the condition or quality of the circulating fluids, is inadmiſſible, becauſe it is ſcarcely conceivable. That ſuch alteration is made in the quality of fluids in putrid fevers is manifeſt from the contagious effects of the ſeveral excretions. But in caſes of intermittents and remittents which originate in marſhy ſituations, no ſuch evidence is afforded, for there is no authentic inſtance of theſe being contagious or communicable from one to another.

"As no other exhalations or noxious matters than thoſe which

* Does the union of dead animal and vegetable ſubſtances prevent the noxious effects of each other?

† "Having filled a tea-cup with putrid water, taken from a ditch, in the meadows on the ſouth ſide of Edinburgh (which in ſummer contain a conſiderable quantity of extremely putrid ſtagnating water), and another cup with pure water, I put a bit of mutton into each cup, and ſet them together in the open air. The mutton in the pure water began to putrefy in about 56 hours. At the end of three days, that in the marſh water was quite ſweet. On the fifth day it was taken out, waſhed carefully with pure water, and found perfectly ſweet. That in the pure water was now become intolerably fetid, and on that account was thrown away. The ſeventh day the mutton in the marſh water was waſhed again, and found as freſh as before. When it had lain in about ſix weeks, it ſtill continued perfectly ſweet, and the liquor around it of the ſame ſmell and colour as at firſt. After two months, things were exactly the ſame. The mutton was then thrown out." Alexander's Experimental Enquiry, p. 71.

From the experiments of the ſame gentleman it appears, that pieces of dead fleſh, ſuſpended over the exhalations of the putrid water of marſhes, are five or ſix days longer putrefying than thoſe ſuſpended over the exhalations of pure water. (See his 15th and 17th experiments.)

have now been enumerated, can be discovered in the most unsalutary atmosphere of marshes; as there is no source from whence any other noxious substance can be introduced into the atmosphere of such situations; and as it is evident, from the known effects of the gases which have been discovered in it, that they cannot have the effect of producing the diseases under consideration, either when applied singly or united, we certainly ought to hesitate before we adopt the doctrine heretofore taught, respecting marsh miasmata.

"But as it is well known that a very material alteration is made in the proportions, which one of the component parts of the atmosphere bears to the other, by certain processes of nature and art, let us enquire how far the alteration which is made in the atmosphere and marshes, by the process of putrefaction, may affect the present question.

"Mr. Vanbreda's experiments prove, that there is less oxygen in the atmosphere of marshes during autumn, when the weather is dry and hot, than in more salutary situations; and it is well known, from innumerable experiments, made by different philosophers, that this can only be diminished by combustion, fermentation, putrefaction, or respiration, or a process of a similar kind.

"It is also a fact, fully established, that the functions of life, as well as the process of combustion and fermentation, can only be continued by the application of oxygenous gas, and that these are affected in proportion to the quantity and purity of the gas applied.

"It was formerly discovered by Vesalius, and has since been confirmed by the observations of doctors Lower, Priestley, Crawford, and others, that the blood in the pulmonary veins is of as red and florid a colour as in the arteries, which is the reverse in every other part of the system. This circumstance has been demonstratively proved to be owing to the action of the oxygen, or the base of pure air upon the blood in the pulmonary veins.

"From the experiments of the discerning and ingenious Dr. Goodwin upon living animals, it appears that the action of the heart cannot be continued by the reception of the blood, which has not undergone this change of colour in the pulmonary veins from the application or introduction of oxygen. This fact has been since confirmed by the experiments of Dr. Girtanner, as may be seen in his essay on the principle and laws of irritability.

"That blood impregnated with oxygen, or the base of pure air, is the necessary and appropriate stimulus for giving motion to the heart, and enabling it to carry on the circulation of the blood, was rendered evident from the gradual diminution and debility of its contractions, as the colour of the blood became darker when the pure air was excluded, and from its contractions becoming

ſtronger as the blood recovered its florid colour from the application of pure air.

"In theſe experiments, all the other functions of the body were obſerved to be proportionally affected with the heart. As its contractions diminiſhed, the power of theſe alſo declined: as the power of the heart recovered, theſe alſo recovered.

"By theſe experiments we learn that the abſtraction or excluſion of the oxygenous part of the atmoſphere, in a given ſpace, is ſufficient of itſelf to deprive animals of life by withholding the cauſe of action. Hence we are authoriſed, by the chaſteſt rules of induction, to conclude, that health and life muſt be affected, more or leſs, in proportion to the quantity of this vivifying principle at any time abſtracted from the atmoſphere, which more immediately ſurrounds us.

"The preſence of the other component part of the atmoſphere, the baſe of the azotic gas though totally oppoſite to the oxygen with which it forms a perfect compound, and neutral ſubſtance when mixed in the proportions already mentioned, appears to have no ſhare in deſtroying life, though its name is derived from a miſtaken ſuppoſition that it had the effect; for the heart immerſed in this gas will retain its irritability ſeveral hours, in a warm ſituation, after all ſigns of life have diſappeared in the reſt of the body. Mr. Valli's experiments on animal electricity have eſtabliſhed this fact.

"Carbonic gas, or fixed air, on the contrary, produces its deſtructive effects by a direct operation, for it deſtroys the nervous power and the irritability of the muſcular fibres the inſtant that it is received into the lungs, and comes in contact with the heart.

"If the carbonic gas operated, as ſuggeſted by Mr. Kite, by inducing a ſpaſm of the glottis, and thereby excluding the atmoſpheric air, the heart, as in other caſes of ſuſpended reſpiration, would retain its irritability for ſome time; but this is not the caſe.

"From the facts and obſervations which have now been ſtated, I think it may be fairly concluded, that the cauſes of the unwholeſomeneſs of low and moiſt ſituations in the ſummer and autumnal months, is not owing to any inviſible miaſmata or noxious effluvia, which iſſue from the ſoil, and lurk in the air, but to a very different cauſe, *viz.* to a deficiency of the oxygenous portion of the atmoſphere in ſuch ſituations, in conſequence of vegetable and animal putrefaction, in conjunction with the exhauſting and debilitating heat of the days, and the ſedative power of the cold and damp air of the nights.

"For want of the refreſhing and ſalutary ſtimulus of the pure air, all the functions of the body are performed imperfectly and languidly. The nervous ſyſtem in particular becomes preter-

naturally susceptible of impressions from every change that occurs in the temperature of the surrounding atmosphere. The application of, or exposure to, a damper and colder state of the air than usual, renders the vessels on the surface of the body powerless and atonic, the brain and heart sympathise with the extreme nerves and vessels, the power of every function of the body declines, till the heart, roused by accumulating blood, reacts with increasing velocity, and is relieved of the unusual burthen.

"That the causes which I have now assigned are the true ones, is rendered next to certain, from the frequent occurrence of those diseases (which have heretofore been supposed to depend upon the operation of specific miasmata) in situations remote from marshy grounds, particularly in large and populous cities, where sedentary occupations, and want of exercise, render the inhabitants delicate and infirm. I have seen numerous instances of this kind even in the winter season, when no effluvia from marshes could possibly exist, especially among those who had been previously debilitated by other disorders. Nor is it uncommon for persons who have recovered from intermittents in the autumn, to have frequent recurrences to the same disease in the winter, merely from sitting in a damp room, or other exposure to cold.

"In persons much reduced by the diseases of autumn, it is also very common, when attacked with inflammatory diseases of winter, for the system to resume its customary habits of action, and for the fever to resemble an intermittent in the time and manner of its exacerbations and remissions, and immediately after the removal of the local affection to become a regular intermittent. This is so generally the case on the eastern shore of Maryland, that the physicians in that country seldom make much use of the lancet in any of the diseases which occur there, except in the spring season. Are we not authorised, from these facts, to infer, that any circumstances which occasion a certain state of debility and irritability in the vessels and nerves on the surface of the body, and in the sensorium at the same time, are predisposing causes of the diseases we are now considering; and that when the system is in this condition, by whatever cause induced, the sudden application of cold, terror, or any other suddenly debilitating power, may become the exciting or occasional cause of febrile disease, in an indirect manner, by repelling the blood to the heart, lungs, and brain, and forcing them to react by the stimulus of distension?

"If the diseases of marshy situations were produced by a specific matter, they could never be produced by any other cause; but as they are frequently induced in seasons and situations where that supposed specific matter or miasma cannot possibly exist, there is nothing more clear than that they are not produced by any such specific matter.

"The opinion, that thoſe diſeaſes are the product of ſpecific matter generated by vegetable putrefaction, appears to be rendered groundleſs from the diſeaſe varying in its type and ſymptoms, in proportion to the extent and putridity of the ſoil, ſtate of climate, ſeaſon and weather, with reſpect to heat, moiſture, &c. and alſo in its not being contagious, the reverſe of which is the caſe with all known diſeaſes that are derived from ſpecific matter.

"We are aſſured, by the accurate Monro, in his account of the diſeaſes which prevailed in the military hoſpitals in Germany, in 1761 and 1762, that the intermitting fever ſeldom attacked any but thoſe whoſe ſolids had been previouſly relaxed by the preceding heat of the ſummer, except when they had been fatigued and over-heated by the ſun, and afterwards expoſed to the evening dews.

"Dr. Lind, of Windſor, ſays, ſudden expoſure to cold occaſioned either an inflammatory fever or a ſimple intermittent at Bengal, according to the prediſpoſition of the body.

"The ſcurvy, as well as the diſeaſes already enumerated, alſo appears to derive its exiſtence from a deficiency of pure air in conjunction with a cold and moiſt atmoſphere, and a diet of ſalted fleſh meats. For it generally prevails in long voyages after a continuance of wet weather. The hatches being kept ſhut at ſuch times, prevents ventilation, in conſequence of which the oxygen becomes exhauſted.

"Captain Cook in his two laſt voyages preſerved his crew from the ſcurvy by frequent ventilation, conſtant cleanlineſs, ſuitable clothing, and ſtrict diſcipline.

"Dr. Trotter aſſures us, that in a ſlave ſhip, of which he was ſurgeon, the ſeamen that were conſtantly on deck, and fed with the ordinary ſea diet, remained free from the ſcurvy, while the ſlaves, that lived principally on vegetables, but breathed a confined impure air, fell miſerable victims to it.

"The remarkable caſe of the blue boy, deſcribed by Dr. Sandifort, of Leyden, furniſhes another ſtriking example of the importance of oxygen in the preſervation of health and life, as well as a confirmation of its being the cauſe of the red colour of the blood.

"In this boy, whoſe ſkin was as blue as indigo, the aorta communicated with both ventricles of the heart, in conſequence of which the greateſt part of the blood was immediately propelled from the right ventricle into the aorta, ſo that very little paſſed into the pulmonary artery to be oxygenated.

"An opinion equally erroneous with that which has lately prevailed reſpecting the cauſes of intermittent fevers, &c. has alſo been delivered down from age to age, reſpecting the cauſes of continued fevers of the nervous or putrid kind.

"The doctrine formerly taught reſpecting theſe was, that they derived their exiſtence from the effluvia of dead and putrid animal

ſubſtances: but, from more recent and accurate obſervations, it appears that the contagion by which this kind of fever is produced, as well as thoſe of a peſtilential nature, is always derived from the living human body in confined and unventilated ſituations, and it is probable that the effluvia thus excreted partake of the quality of nitrogen gas, from their being rendered harmleſs by a union with oxygen or the baſe of pure air.

"It appears more than probable alſo, from the hiſtory of the circumſtances always preſent at the time febrile contagion is generated, that it is rendered virulent and powerful in proportion to the abſence or defect of oxygen, and the degree of heat to which the living body has been expoſed in ſuch ſituations. It was a concurrence of theſe circumſtances which gave origin to the yellow fever which appeared in Grenada in the beginning of the year 1793, and which was afterwards imported into Philadelphia, as appears from the account publiſhed by Dr. Chiſholm*.

"Noxious effluvia indeed frequently ariſe from putrid animal ſubſtances in confined ſituations. Dr. Monro mentions a remarkable inſtance of this, and ſome later examples are recorded by Mr. St. John; but it does not appear from theſe caſes, that thoſe noxious effluvia produced any ſymptoms reſembling thoſe of putrid or peſtilential fevers: on the contrary, they acted as direct ſtimulants, and occaſioned inflammatory affections without being preceded by that ſenſe of debility which always precedes thoſe fevers that are occaſioned by febrile contagion.

"Having now ſhown that the diſeaſes which prevail moſt generally during the autumnal ſeaſon in low and marſhy ſituations owe their origin, not to inviſible exhalations or miaſmata, but to the cauſes which I have aſſigned; the prophylaxis, or the means of preventing the occurrence of thoſe diſeaſes, muſt be ſimple and obvious.

"Theſe are, to introduce and increaſe the proportion of oxygenous gas in the ſuperincumbent atmoſphere, and to prevent its future abſtraction, by cutting off or diminiſhing the ſources of putrefaction.

"It would be a happy circumſtance, if the application of the means ſuited to produce an amendment in a body ſo large and fluctuating as the atmoſphere, was as practicable as the means ſuited to effect that purpoſe are obvious: but, unfortunately, this requires too much labour and expence to admit of extenſive application, eſpecially in a country where population and wealth do not bear a due proportion to the extent of territory.

"We ought, however, to attempt every thing in our power to effect ſo deſirable and uſeful an event.

* Vide Chiſholm's Eſſay on the Fever of Grenada in 1793, &c.

"Chemiſtry furniſhes various articles by means of which we can generate and introduce a ſupply of oxygen into the atmoſphere, as well as alter the quality of thoſe noxious gaſes with which it is occaſionally contaminated.

"Theſe, however, can only be employed in a very limited and partial manner, and of courſe can only produce a limited and partial amendment.

"I ſhall therefore mention only a few of the ſubſtances th a m be occaſionally employed for this purpoſe.

"A large portion of oxygen may be furniſhed by the decompoſition of nitre, as is demonſtrated from its maintaining the combuſtion of inflammable bodies.

"If lighted charcoal be placed in a proper expoſure to the open air, it will continue to burn till the whole be reduced to aſhes.

"If nitre be mixed with charcoal, and when kindled placed in a cloſe veſſel, the combuſtion will continue as well as if expoſed to the open air; whereas, without the aſſiſtance of the nitre, the charcoal would be immediately extinguiſhed in that ſituation for want of a ſupply of oxygen.

"Mr. Scheel, by heating nitre to red heat in a retort, received into a moiſtened bladder more than fifty ounces in meaſure of oxygen gas from one ounce of nitre. A pound will therefore furniſh 800 ounces.

"Nitre ground with two-thirds of its weight of minium and moiſtened with water, ſo as to form a paſte, burns very rapidly, and emits a conſiderable quantity of pure air.

"But the grand engine, by which the ſources that deprive the atmoſphere of its ſalutary and vivifying principle are to be cut off, and the great magazine, from whence a ſufficient ſupply is to be obtained, muſt be ſought for in the art of agriculture.

"The ſtagnant waters may be carried off, and the ſoil of marſhes rendered dry, by means of drains, deep trenches, and wells; and farther ſtagnation and putrefaction prevented, by conſuming the dead weeds, graſs, and woods, and by filling up the flats, ſinks, and hollows, with clay, ſand, or lime.

"And the atmoſphere may be ſupplied with a profuſion of oxygen by cultivating on ſuch ſoils graſſes and plants of vigorous growth, and eſpecially thoſe which live and flouriſh lateſt in the ſeaſon. For vegetables, while living and growing, when expoſed to the rays of light, conſtantly decompoſe the water they imbibe from the earth and air, and while they retain the hydrogen or baſe of inflammable air for the formation of oil, wax, honey, or reſin, they repleniſh the atmoſphere with oxygen*.

"When it is impracticable to render marſhy ſituations dry, on

* Chaptal's Chemiſtry. Ingenhouſz's Obſervations, &c.

account of their extent, they ſhould be kept conſtantly flooded by means of dams and ſluices, to prevent the effects of putrefaction; for, when dead vegetable or animal ſubſtances are immerſed in water ſo as to be entirely excluded from contact with the air, putrefaction can only take place in a ſlow and imperfect manner.

"But clearing the woods, plants, and herbs, from marſhy or fenny tracts, without draining off the ſtagnant water at the ſame time, and deſtroying the dead herbage by fire, inſtead of rendering ſuch ſituations more healthful, has been found to have a different effect, becauſe a greater extent of putreſcent ſurface is thereby expoſed to the rays of the ſun, and of courſe a greater portion of oxygen abſtracted from the atmoſphere. It is owing, in a great meaſure, to this circumſtance, that all new countries are ſo generally fatal to the firſt ſettlers.

"The ſame land after it has been cultivated a few years, eſpecially if there be ſufficient declivity to prevent the water from ſtagnating, loſes its unwholeſomeneſs, the putreſcent ſubſtances mixed with the ſoil or ſuperficial ſtratum of the ground having finiſhed the putrefactive proceſs by that time. In order, therefore, to render and preſerve marſhy countries healthful, they ſhould be preſerved dry and clean by means of the ſpade, the plough, and the rake.

"When the level ſituation of a place prevents the ſtagnant water from being carried off by drains, deep wells ſhould be dug, in different places, for the water to collect in, by which means a greater portion of the ſoil will be rendered dry, and leſs noxious.

"To prevent ſtill farther the injurious effects of reſiding near marſhes or mill-ponds, rows of ſuch trees as grow rapidly, and retain their verdure late in the ſeaſon, ſhould be planted between thoſe ſituations and the manſion, for the purpoſe of intercepting the moiſture in its progreſs, while they furniſh a conſtant ſupply of oxygen to the atmoſphere.

"Lodging in the upper ſtory of a houſe has been found to preſerve health during a ſickly ſeaſon, inſtances of which are recorded by Sir John Pringle. This appears to be owing to thoſe ſituations being out of the reach of the moiſture from the ground."

SECT. II. CONTINUED FEVER.

Continuæ, *Sauv.* claſs ii. ord. 1. *Vog.* claſs I. ord. 2. *Sag.* 666. *Boerh.* 727.

Continentes, *Lin.* claſs ii. ord. 1. *Stahl.* Caſ. mag. 35. Caſ. min. 87. *Junck.* 58. *Sennert.* de febr. L. ii. cap. 2. et 10.

GENUS IV. SYNOCHA.

Synocha, *Sauv.* gen. 80. Lin. 12. *Junck.* 58.

Synocha, ſive febris acuta ſanguinea, *Hoffm.* II. 105.

Synochus, *Vog.* 16.
Continua non putris, *Boerh.* 720.
Ephemera, *Sauv.* g. 79. *Boerh.* 728. *Junck.* 57.
Diaria, *Lin.* 11.
Febris inflammatoria auctorum.

1. *Description.*] The moſt ſimple kind of ſynocha is the ephemera or diary fever. It begins without any ſenſation of cold or ſhivering, unleſs there be ſome internal inflammation, or the ſmall-pox or meaſles happen to be preſent. A continual heat without any intermiſſion conſtitutes the eſſence of this diſeaſe. The heat, however, is more tolerable than in the ſynocha properly ſo called. In ſome the pains of the head are pungent and throbbing, anſwering to the pulſations of the arteries; but in others they are dull and heavy. The face is red and bloated; and there is a remarkable laſſitude of the limbs, with a ſtrong, full, and frequent pulſe. The urine is red, and depoſits a ſediment almoſt of the colour of orange-peel; and in the very firſt day of the diſeaſe, ſigns of *concoction* (according to the Hippocratic phraſe) appear. The fever commonly goes off with a gentle ſweat, but ſometimes, though more rarely, with an hemorrhagy of the noſe. Its ſhorteſt period is twenty-four hours; but if it goes beyond the fourth day, it is then a *ſynocha* properly ſo called.

The ſimple ſynocha, according to Vogel, begins with cold and ſhivering, ſucceeded by vehement heat, redneſs and dryneſs of the ſkin.—The face, eſpecially, is very red, and the thirſt intenſe. The head is either pained or heavy. The patient either doth not ſleep at all, or is diſturbed with dreams. A moiſt ſweat then breaks out all over the ſkin. The pulſe is full, quick, and frequent; the judgment is ſometimes a little diſturbed: young people are apt to be terrified with imaginations; and they for the moſt part incline to ſleep: the reſpiration is difficult, and the belly coſtive; at the ſame time that a tenſive kind of laſſitude is perceived over the whole body. A complete criſis takes place either on the fourth or at the fartheſt on the eleventh day. The characteriſtic marks of the ſimple ſynocha, therefore, are, a redneſs of the face, moiſture of the ſkin, a ſtrong and frequent pulſe.

Cauſes of, and perſons ſubject to, this diſeaſe.] As we have already remarked of intermittents, ſo muſt we alſo now remark of continued fevers, that it is impoſſible to diſcover thoſe minute cauſes which occaſion the difference of type betwixt one inflammatory fever and another, though moſt authors pretend to enumerate theſe with great certainty. Thus Juncker tells us, that the cauſe of the ſimple ephemera is plethora, together with any immoderate agitation and commotion of the fluids while in that ſtate. Vogel reckons among the cauſes of his *febris diaria*, paſſions of the mind, pain, want, expoſure to the ſun, &c.; a

repulsion or absorption of certain humours; wounds, fractures, luxations, &c.; so that in general we may reckon every thing tending to increase the action of the arterial system to be in certain circumstances a cause of inflammatory fever. Hence we find those are most subject to the synocha whose constitution is either naturally robust, or who are exposed to those causes which tend to produce an increased action of the arterial system; such as hard labour, high living, &c.

3. *Prognosis.*] The most simple kind of synocha, that is, the ephemera or diary fever, is commonly cured without the assistance of medicine, and therefore the prognosis is for the most part favourable: yet, if it be improperly treated by heating medicines, it may easily be converted into the other kind; or, if there be a putrid disposition of the fluids, into a fever of a very dangerous nature. The same thing is to be understood even of the most violent kind; for simple inflammatory fevers are not dangerous unless complicated with an affection of some particular part, as the pleura, stomach, &c.

4. *Cure.*] Dr. Cullen objects to the plan of those who are for leaving the cure of continued fevers to the operations of nature; because these operations are neither certain in themselves, nor are they so well understood as to enable us to regulate them properly; and it is likewise possible to supersede them by art. The plan therefore on which he proceeds is, to form his indications of cure upon the means of obviating the tendency to death in fevers; and these he reduces to three. 1. To moderate the violence of re-action. 2. To remove or obviate the causes of debility; and, 3. To obviate or correct the tendency of the fluids to putrefaction.

The *first* indication may be answered, 1. By all those means which diminish the action of the heart and arteries. 2. By those which take off the spasm of the extreme vessels, which, according to his theory, is the chief cause of violent re-action.

I. The action of the heart and arteries may be diminished, 1. By avoiding or moderating those irritations which, in one degree or other, are almost constantly applied to the body. 2. By the use of certain sedative powers. 3. By diminishing the tension or tone of the arterial system.

α The irritations above mentioned are the impressions made upon our senses, the exercise of the body and mind, and the taking in of aliments.—The avoiding of these as much as possible, or the moderating their force, makes what is properly called the *antiphlogistic regimen*, proper to be employed in *almost* every continued fever. This regimen is to be directed in the following manner.

1. Impressions on the external senses, as stimulant to the system, and a chief support of its activity, should be avoided as much as possible; especially such as are of a stronger kind, and

which give pain and uneaſineſs. No impreſſion is to be more carefully guarded againſt than that of external heat; and at the ſame time every other means of increaſing the heat of the body is to be ſhunned. Both theſe precautions are to be taken as ſoon as a hot ſtage is fully formed, and to be attended to during its continuance, except in certain caſes, where a determination to ſweating is neceſſary, or where the ſtimulant effects of heat may be compenſated by circumſtances which determine it to produce a relaxation and revulſion.

2. All motion of the body is to be avoided as much as poſſible, and that poſture only choſen which employs the feweſt muſcles, and keeps none of them long in a ſtate of contraction. Speaking, as it accelerates reſpiration, is particularly to be avoided. It muſt alſo be obſerved, that every motion of the body is more ſtimulant in proportion as the patient is weaker.

3. The exerciſe of the mind is alſo to be avoided, as being a ſtimulus to the body; but here an exception is to be made in the caſe of a delirium coming on, when the preſenting of accuſtomed objects may divert the irregular train of ideas then ariſing in the mind.

4. The preſence of recent aliment in the ſtomach proves always a ſtimulus to the ſyſtem, and ought therefore to be as moderate as poſſible. A total abſtinence for ſome time may be of ſervice; but as this cannot be long continued with ſafety, we muſt avoid the ſtimulus of aliment by chooſing that kind which gives the leaſt. Alimentary matters are alſo to be accounted more ſtimulant in proportion to their alkaleſcent qualities; and this leads us to avoid animal, and uſe moſtly vegetable food.

Dr. Fordyce ſtates the following to be proper ſubſtances for food: viz. decoctions of rice, barley, oats, &c. Barley, oats, rice, &c. ſhelled, and afterwards boiled; or fermented, baked into bread, and afterwards toaſted. Fruits which are not aceſcent or flatulent; recent or dried; roaſted, baked, or boiled. Milk; broths made of pullets, lean mutton, and beef. Pullets about nine months old, roaſted or boiled. Whitings, flounders, &c. theſe fiſhes however are ſeldom to be uſed in continued fevers. For the ſame reaſon, aromatic and ſpirituous liquors are to be avoided; and in anſwering the preſent indication, we muſt abſtain from all fermented liquors except thoſe of the loweſt quality. Other ſtimuli are, the ſenſation of thirſt, crudities or corrupted humours in the ſtomach, a preternatural retention of the fæces in the inteſtines, and a general acrimony of all the humours, which is in moſt fevers to be ſuſpected. Theſe are to be removed by ſuch methods as the urgency of the ſymptoms require, by diluting liquors, vomiting, the uſe of acids, laxative clyſters, and large quantities of antiſeptic drink.

β The ſecond method of moderating the violence of reaction

is by the employment of certain ſedative powers, with a view to diminiſh the activity of the whole body, and particularly that of the ſanguiferous ſyſtem. The firſt of theſe to be mentioned is the application of cold. Heat is the chief ſupport of the activity of the animal ſyſtem; and the ſyſtem is therefore provided with a power of generating heat in itſelf: but, at the ſame time, we may obſerve, that this would go to exceſs, were it not conſtantly moderated by a cooler temperature in the ſurrounding atmoſphere. When, therefore, the generating power of heat in the ſyſtem is increaſed, as is commonly the caſe in fevers, it is neceſſary not only to avoid all further means of increaſing it, but alſo to apply air of a cooler temperature; or at leaſt to apply it more entirely and freely than in a ſtate of health. This is ſhewn, from ſome late obſervations, to be a very powerful means of moderating the violence of reaction; but what is the mode of its operation, to what circumſtances of fever it particularly applies, or what limitations it requires, are not yet fully aſcertained.

Another ſedative power very frequently employed in fevers, is that of certain medicines known in the materia medica by the name of *refrigerants*. The chief of theſe are acids of all kinds when ſufficiently diluted, and which are, in ſeveral reſpects, remedies adapted to continued fevers. Thoſe eſpecially in uſe are the vitriolic, muriatic, and vegetable; and on many accounts the latter, ſuch as the acids of tarmarinds, lemons, oranges, mulberries, barberries, &c. are to be preferred. Another ſet of refrigerants are the neutral ſalts formed of the vitriolic, nitrous, or vegetable acids, with alkalies either fixed or volatile. All theſe neutrals, while they are diſſolved in water, generate cold; but as that cold ceaſes ſoon after the diſſolution is finiſhed, and as the ſalts are generally exhibited in a diſſolved ſtate, their refringent power in the animal body does not all depend upon their power of generating cold with water. Nitre is the refrigerant chiefly employed; but all the others, compounded as above mentioned, partake more or leſs of the ſame quality. Beſides theſe neutrals, ſome metallic ſalts have alſo been employed in fevers, particularly the ſugar of lead: but the refrigerant powers of this ſalt are by no means aſcertained, and its deleterious qualities are too well known to admit of its ever being uſed.

γ. The third general method of diminiſhing the reaction of the ſyſtem, is by leſſening the tenſion, tone, and activity, of the ſanguiferous ſyſtem. As the activity of the ſyſtem in a great meaſure depends upon the tone, and this again upon the tenſion, of the veſſels, given to them by the quantity of fluids they contain, it is evident that the diminution of the quantity of theſe muſt diminiſh the activity of the ſanguiferous ſyſtem. The moſt efficacious means of diminiſhing the quantity of fluids is by the

evacuations of blood-letting and purging. The former is evidently one of the moſt powerful means of diminiſhing the activity of the whole body, and eſpecially of the ſanguiferous ſyſtem; and it muſt therefore be the moſt effectual means of moderating the reaction in fevers. When the violence of reaction, and its conſtant attendant a phlogiſtic diatheſis, are ſufficiently evident; when theſe conſtitute the principal part of the diſeaſe, and may be expected to continue through the whole of it, as in the caſes of ſynocha; then blood-letting is the principal remedy, and may be employed as far as the ſymptoms of the diſeaſe may ſeem to require, and the conſtitution of the patient will bear. It muſt, however, be remarked, that a greater evacuation than is neceſſary may occaſion a ſlower recovery, and render the perſon more liable to a relapſe, or bring on other diſeaſes. It is alſo to be obſerved, that this evacuation is the more effectual, as the blood is more ſuddenly drawn off, and as the body is at the ſame time more free from all irritation, and therefore when it is in a poſture in which the feweſt muſcles are in action.

With regard to purging, when we conſider the quantity of fluids conſtantly preſent in the cavity of the inteſtines, and the quantity which may be drawn off from the innumerable excretories that open into this cavity, it will be obvious, that a very great evacuation may be made in this way; and if this be done by a ſtimulus that is not at the ſame time communicated to the reſt of the body, it may, by emptying both the cavity of the inteſtines and the arteries which furniſh the excretions poured into it, induce a conſiderable relaxation in the whole ſyſtem; and is therefore ſuited to moderate the violence of reaction in fevers. But it is to be obſerved, that as the fluid drawn from the excretories opening into the inteſtines is not all drawn immediately from the arteries, and as what is even more immediately drawn from theſe is drawn off ſlowly; ſo the evacuation will not, in proportion to its quantity, occaſion ſuch a ſudden depletion of the red veſſels as blood-letting does; and therefore cannot act ſo powerfully in taking off the phlogiſtic diatheſis of the ſyſtem.

At the ſame time the evacuation may induce a conſiderable degree of debility; and therefore, in thoſe caſes in which a dangerous ſtate of debility is likely to occur, purging is to be employed with a great deal of caution; and this caution is more difficult to be obſerved than in the caſe of blood-letting: and it is further to be noticed, that as purging takes off in ſome meaſure the determination of the blood to the veſſels on the ſurface of the body, it ſeems to be an evacuation not well adapted to the cure of fevers.

II. The other method of moderating the violence of reaction in fevers is by the exhibition of thoſe remedies ſuited to take off the ſpaſm of the extreme veſſels, ſuppoſed to be the irritation

which chiefly ſupports the reaction. The means to be employed for this purpoſe are either internal or external.

Firſt, The internal means are, 1. Thoſe which determine the force of the circulation to the extreme veſſels on the ſurface of the body, and, by reſtoring the tone and activity of theſe veſſels, overcome the ſpaſm on their extremities. 2. Thoſe medicines which have the power of taking off ſpaſm in any part of the ſyſtem, and which are known under the title of *antiſpaſmodics*.

(1.) Thoſe remedies which are fit to determine to the ſurface of the body are, 1. Diluents. 2. Neutral ſalts. 3. Sudorifics. 4. Emetics.

1. Water enters, in a large proportion, into the compoſition of all the animal fluids, and a large quantity of it is always diffuſed through the whole of the common maſs. In a ſound ſtate, the fluidity of the whole maſs depends upon the quantity of water preſent in it. Water therefore is the proper diluent of our maſs of blood, and other fluids are diluent only in proportion to the quantity of water they contain.

In a healthy ſtate, alſo, the fullneſs of the extreme veſſels and the quantity of excretion are in proportion to the quantity of water preſent in the body. But in fever, though the excretions be in ſome meaſure interrupted, they continue in ſuch quantity as to exhale the more fluid parts of the blood; and, while a portion of them is at the ſame time neceſſarily retained in the larger veſſels, the ſmaller, and the extreme veſſels, both from the deficiency of fluid and their own contracted ſtate, are leſs filled, and therefore allowed to remain in that condition. To remedy this contracted ſtate, nothing is more neceſſary than a large ſupply of water or watery fluids taken in by drinking or otherwiſe; for as any ſuperfluous quantity of water is forced off by the ſeveral excretories, ſuch a force applied may be a means of dilating the extreme veſſels, and of overcoming the ſpaſm affecting their extremities. Accordingly, the throwing in of a large quantity of watery fluids has been, at all times, a remedy much employed in fevers; and in no inſtance more remarkably than by the Spaniſh and Italian phyſicians, in the uſe of what they call the *diæta aquea*. This practice conſiſts in taking away every other kind of aliment and drink, and in giving, in divided portions, every day for ſeveral days together, ſix or eight pounds of plain water, generally cold, but ſometimes warm. All this, however, is to be done only after the diſeaſe has continued for ſome time, and at leaſt for a week.

2. A ſecond means of determining to the ſurface of the body, is by the uſe of *neutral ſalts*. Theſe neutrals, in a certain doſe, taken into the ſtomach, produce ſoon after a ſenſe of heat upon the ſurface of the body; and, if the body be covered cloſe and kept

warm, a ſweat is readily brought out. The ſame medicines taken during the cold ſtage of a fever, very often put an end to it, and bring on the hot one; and they are alſo remarkable for ſtopping the vomiting which ſo frequently attends the cold ſtage of fevers. All this ſhows, that neutral ſalts have a power of determining the blood to the ſurface of the body, and may therefore be of uſe in taking off the ſpaſm which ſubſiſts there in fevers. The neutral moſt commonly employed in fevers, is that formed of an alkali with the native acid of vegetables. But all the other neutrals have more or leſs the ſame virtue; and perhaps ſome of them, particularly the ammoniacal ſalts, poſſeſs it in a ſtronger degree. As cold water taken into the ſtomach often ſhows the ſame diaphoretic effects with the neutral ſalts, it is probable that the effect of the latter depends upon their refrigerant powers. The following is very generally given in the London hoſpitals:

(No. 21.) ℞ Aq. Menth. ſativæ ℥iſs.
Kali præp. ℈j.
Succ. Limon. q. ſ. ad ſat.
Syr. Croci ʒij. M. f. Hauſt. cap. quarta quaq. hora.

Among the formulæ of St. Bartholomew's is the following, under the name of *Hauſtus Kali cum limone.*

(No. 22.) ℞ Kali præp. Sacch. pur. ſing. ℈j.
Succ. limon. ℥ſs.
Aq. Menth. pip. ℥iſs. Miſce fiat Hauſt.

In the Pharmacopœia of Guy's hoſpital are the following formulæ, which appear to be well adapted to theſe ends:

(No. 23.) ℞ Aquæ ammoniæ acet.
—— menthæ ſativ. ſing. ℥iiiſs.
Miſce fiat Julepum.

(No. 24.) ℞ Kali acetati ℥ſs.
Aquæ menthæ ſativ. ℥vij.
Syrupi zingiberis ℥ſs. Miſce fiat Julepum.

(No. 25.) ℞ Nitri purificati ℈iv.
Aquæ diſtillatæ ℥vij.
Syrupi ſimp. ʒij. Miſce.

Of theſe three or four ſpoonfuls may be adminiſtered twice or thrice a-day.

The late Dr. Hugh Smith recommended the following:

(No. 26.) ℞ Kali præpar. ℈j.
Succ. limon. ℥ſs.
Aquæ cinnam. ℥j.
Sacchari alb. ʒſs.
Miſce fiat Hauſtus quarta quaque hora ſumendus.

3. A third method of determining to the ſurface of the body, and taking off the ſpaſm ſubſiſting there, is by the uſe of *ſudorifics.* The propriety of this remedy has been much diſputed; and many ſpecious arguments may be adduced both for and againſt the

practice. In its favour may be urged, 1. That in healthy perſons, in every caſe of increaſed action of the heart and arteries, a ſweating takes place, and is, ſeemingly, the means of preventing the bad effects of ſuch increaſed action. 2. That, in fevers, their moſt uſual ſolution and termination is by ſpontaneous ſweating. 3. That, even when excited by art, it has been found uſeful at certain periods, and in certain ſpecies of fever.—On the other hand, it may be urged againſt the practice of ſweating, 1. That in fevers, as a ſpontaneous ſweating does not immediately come on, there are ſome circumſtances different from thoſe in the ſtate of health, and which may render it doubtful whether the ſweating can be ſafely excited by art. 2. That in many caſes the practice has been attended with bad conſequences. The means commonly employed have a tendency to produce an inflammatory diatheſis; which, if not taken off by the ſweat ſucceeding, muſt be increaſed with much danger. Thus ſweating employed to prevent the acceſſions of intermitting fevers has often changed them into a continued form, which is always dangerous. 3. The utility of the practice is doubtful; as ſweating, when it happens, does not always give a final determination, as muſt be manifeſt in the caſe of intermittents, and in many continued fevers which are ſometimes in the beginning attended with ſweatings which do not prove final; and, on the contrary, whether they be ſpontaneous or excited by art, they ſeem often to aggravate the diſeaſe.

From theſe conſiderations, it is doubtful if the practice of ſweating can be admitted very generally; but, at the ſame time, it is alſo very doubtful if the failure of the practice, or the miſchiefs ſaid to ariſe from it, have not been owing to the improper conduct of the practitioner. With reſpect to the laſt, it is almoſt agreed among phyſicians, 1. That ſweating has been generally hurtful when excited by ſtimulant, heating, and inflammatory medicines. 2. That it has been hurtful when excited by much external heat, and continued with a great increaſe of the heat of the body. 3. That it is always hurtful when it does not relieve; and rather increaſes the frequency and hardneſs of the pulſe, the anxiety and difficulty of breathing, the headach, and delirium. 4. That it is always hurtful if it be urged when the ſweat is not fluid, and when it is partial and on the ſuperior parts of the body only.

In theſe caſes, it is probable, that either an inflammatory diatheſis is produced, which increaſes the ſpaſm on the extreme veſſels; or that, from other cauſes, the ſpaſm is too much fixed to yield eaſily to the increaſed action of the heart and arteries; and upon either ſuppoſition it muſt be obvious, that urging the ſweat may produce determinations to ſome of the internal parts, attended with very great danger.

Notwithſtanding theſe doubts, however, it ſtill remains true, 1. That ſweating has been often uſeful in preventing the acceſſions of fevers when they have been certainly foreſeen, and a proper conduct employed. 2. That even after fevers have in ſome meaſure come on, ſweating has interrupted their progreſs when properly employed, either at the very beginning of the diſeaſe, or during its approach and gradual formation. 3. That even after pyrexiæ have continued for ſome time, ſweating has been ſucceſsfully employed in curing them, as is particularly exemplified in the caſe of a rheumatiſm. 4. That certain fevers produced by a very powerful ſedative contagion, have been generally treated moſt ſucceſsfully by ſweating.

Theſe inſtances are in favour of ſweating, but give no general rule; and it muſt be left to farther experience to determine how far any general rule can be eſtabliſhed in this matter. In the mean time, if the practice of ſweating is to be attempted, the following rules may be laid down for the conduct of it. 1. That a ſweat ſhould be excited without the uſe of ſtimulant inflammatory medicines. 2. That it ſhould be excited with as little external heat, and with as little increaſe of the heat of the body, as poſſible. 3. That, when excited, it ſhould be continued for a due length of time; not leſs than twelve hours, and ſometimes for twenty-four or forty-eight hours; always, however, ſuppoſing that it proceeds without the dangerous circumſtances already mentioned. 4. That for ſome part of the time, and as long as the perſon can eaſily bear, it ſhould be carried on without admitting of ſleep. 5. That it ſhould be rendered univerſal over the whole body; and, therefore, particularly that care ſhould be taken to bring the ſweating to the lower extremities. 6. That the practice ſhould be rendered ſafer by moderate purging excited at the ſame time. 7. That it ſhould not be ſuddenly checked by cold any-how applied to the body.

When attention is to be given to theſe rules, the ſweating may be excited, 1. By warm bathing, or a fomentation of the lower extremities. 2. By frequent draughts of tepid liquors, chiefly water, rendered more grateful by the addition of a light aromatic, or more powerful by that of a ſmall quantity of wine. 3. By giving ſome doſes of neutral ſalts. 4. Moſt effectually, and perhaps moſt ſafely, by a large doſe of an opiate joined with a portion of neutral ſalts, and of an emetic.

The fourth mean of determining to the ſurface of the body, and thereby taking off the ſpaſm affecting the extreme veſſels, is by the uſe of emetics. Theſe, particularly of the antimonial kind, have been employed in the cure of fevers ever ſince the introduction of chemical medicines; and, though of late their uſe has become very general, their efficacy is ſtill diſputed, and their manner of operating is differently explained.

Vomiting is in many reſpects uſeful in fevers; as it evacuates the contents of the ſtomach, as it emulges the biliary and pancreatic ducts, and evacuates the contents of the duodenum, and perhaps alſo of a larger portion of the inteſtines; as it agitates the whole of the abdominal viſcera, it expedites the circulation in them, and promotes their ſeveral ſecretions; and laſtly, as it agitates alſo the viſcera of the thorax, it has like effects there.

It is not to this cauſe, however, that we are to impute the effect vomiting has in determining to the ſurface of the body. This muſt be attributed to the particular operation of emetics upon the muſcular fibres of the ſtomach, whereby they excite the action of the extreme arteries on the ſurface of the body, and by this means effectually determine the blood to theſe veſſels, remove the atony, and take off the ſpaſm affecting them. For this purpoſe they are exhibited in two different ways; that is, either in ſuch doſes as may excite full and repeated vomitings, or in ſuch doſes as may excite ſickneſs and nauſea only, with little or no vomiting at all.

Full vomiting is well ſuited to determine to the ſurface of the body, and thereby to obviate the atony and ſpaſm which lay the foundation of fever. Thus, vomiting excited a little before the expected acceſſion of the paroxyſm of an intermittent, has been found to prevent the paroxyſm altogether. It has been obſerved alſo, that when contagion has been applied to a perſon, and firſt diſcovers its operation, a vomit given has prevented the fever which might otherwiſe have been expected.

Theſe are the advantages to be obtained by exciting vomiting at the firſt approach of fevers, or of the paroxyſm of fevers; and they may alſo be uſed after fevers are formed, to take off, perhaps entirely, the atony and ſpaſm, or at leaſt to moderate theſe, ſo that the fever may proceed more gently and ſafely. It is ſeldom, however, that vomiting is found to produce a final ſolution of fevers; and after they are once formed, it is commonly neceſſary to repeat the vomiting ſeveral times; but this is attended with inconvenience, and ſometimes with diſadvantage. The operation of full vomiting is tranſitory, and the exerciſe of vomiting is a debilitating power; and therefore, when the vomiting does not remove the atony and ſpaſm very entirely, it may give occaſion to their recurrence with greater force. For theſe reaſons, after fevers are fully formed, ſome phyſicians have thought proper to employ emetics in naufeating doſes only. Theſe are capable of exciting the action of the extreme veſſels, and their operation is more permanent. At the ſame time they often ſhow their power by exciting ſome degree of ſweat, and their operation is rendered more ſafe by their commonly producing ſome evacuation by ſtool. But nauſea continued for any great length of time, is, to moſt patients, a ſenſation highly diſtreſſing, and almoſt inſufferable.

The emetics chiefly in uſe at preſent are, ipecacuanha and an-

timony. The former may be employed for determining to the surface of the body: but, even in very small doses, it so readily excites vomiting, that it is with difficulty employed for the purpose of nauseating only; and, in whatever manner employed, there is reason to suspect that its effects are less permanent, and less powerfully communicated from the stomach to the rest of the system, than those of antimony. This last is therefore generally preferred; and its preparations, seemingly various, may all be reduced to two heads; one comprehending those in which the reguline part is in a condition to be acted upon by acids, and therefore on meeting with acids in the stomach it becomes active; and another, comprehending those preparations in which the reguline part is already joined with an acid, rendering it active. Of each kind there are great numbers, but not differing essentially from one another; the two most worthy of notice are, the *calx nitrata antimonii* of the Edinburgh, and the *antimonium tartarisatum* of the London dispensatories. Both these are very efficacious medicines; but the latter seems preferable, because its dose is capable of being better ascertained; though the former, on account of its slower operation, may have some advantages, and in certain cases be more efficacious as a purgative and sudorific.

The *calx nitrata antimonii*, when first introduced into the pharmacopœia of the Edinburgh college, was supposed to be very nearly, if not precisely, the same with a medicine which has long been highly celebrated in the cure of fevers, Dr. James's powder. But from later and more accurate observations, there is now reason to believe that the *pulvis antimonialis* of the London pharmacopœia, formed by the calcination of antimony with hartshorn, approaches more nearly to that celebrated arcanum. But at any rate, the calx antimonii nitrata, the pulvis antimonialis, and James's powder, are probably not essentially different from each other. The two latter, however, have the most near resemblance; and accordingly the Edinburgh college in the last edition of their pharmacopœia have introduced an article under the title of *antimonium calcareo-phosphoratum*, which they consider as so much similar to James's powder, that they have used as a synonyme for it, the title of *pulvis Jacobi*.

The time most proper for exhibiting these medicines is a little before the accession, when that can be certainly known. In continued fevers the exacerbations are not always very observable; but there is reason to believe, that one commonly happens about noon or soon after it; and that these, therefore, are the most proper times for exhibiting emetics.

With respect to the manner of administration, that of the *pulvis antimonialis* is simple, as the whole of what is thought a proper dose may be given at once; and no more can be properly given till the accession. The administration of the tartarised antimony

is different. It is to be given in ſmall doſes, not ſufficient to excite vomiting; and theſe doſes are to be repeated after ſhort intervals for ſeveral times, till ſickneſs, nauſea, and ſome, though not much, vomiting come on. The difference of adminiſtration muſt depend upon the doſe, and the length of the interval at which it is given. If it be intended that the medicine ſhould certainly operate by ſtool, the doſes are made ſmall, and the intervals long. On the contrary, when vomiting is proper, or when much purging ought to be avoided, and therefore ſome vomiting muſt be admitted, the doſes are made larger, and the intervals ſhorter. With reſpect to both kinds of preparations, the repetition is to be made at the times of acceſſion, but not very often: for if the firſt exhibitions, duly managed, have little effect, it is ſeldom that the after-exhibitions have much; and it ſometimes happens that the repeated vomiting, and eſpecially repeated purging, does harm by weakening the patient.

Dr. Fordyce in his treatment of fever, greatly relies on the uſe of this claſs of medicines, which he names *relaxants*. He gives the following formula:

(No. 27.) ℞ Sacchar. Alb. ʒj.
Antim. tartar. gr. ſs. ad gr. iij. Divide in pulv. vj.
Capiat j. ſexta quaque horâ.

If the bowels are too much affected by antimony, he in that caſe ſubſtitutes a grain or two of ipecacuanha, and continues theſe means till the ſpaſm of the extreme veſſels gives way, and the fever is conquered.

At St. Bartholomew's hoſpital the pulvis antimonialis is given in doſes of five grains for the ſame purpoſe.

At Guy's the following formula is employed, in the doſe of three or four ſpoonfuls every four or ſix hours:

(No. 28.) ℞ Antimonii tartariſati gr. ij.
Aquæ diſtillatæ ʒviij. Fiat Julepum.

In ſome caſes it may be proper to join antimonials with the neutral mixtures, as in the following directed by Dr. Saunders:

(No. 29.) ℞ Kali præp. ʒij.
Succ. limon. q. s. ut rite ſaturetur alkali.
Vin. antim. tart. ʒij.
Aquæ Cinnam.
Aquæ diſtillatæ ſing. ʒij.
Syrupi ſimp. ʒij. Sit Julepum, cujus æger capiat cochlearia tria, quarta quavis horâ.

(2.) The other ſet of internal medicines which are ſuppoſed uſeful in taking off the ſpaſm of the extreme veſſels, are thoſe named *antiſpaſmodic*. But whatever may be the virtues of ſome of them in this way, ſuch is their power of ſtimulating at the ſame time, that very few of them can with ſafety be adminiſtered in fevers of an inflammatory nature. Almoſt the only one which

can with ſafety be exhibited in theſe caſes is camphor; and the operations of this are by no means well aſcertained. Dr Huxham mentions it as a corrector of the acrimony of cantharides; and aſſures us, that it very effectually promotes a diaphoreſis. But from the remarks of other practitioners, we have no juſt reaſon to ſuppoſe that it acts perceptibly in a doſe of five or ſix grains, though in 15 or 20 it produces a particular kind of intoxication, and cauſes great heat.

It may not be amiſs to obſerve in this place, that camphor, when joined with antimonials, greatly leſſens the pernicious activity of the latter in fevers. This quality, however, is only obſervable when both are united in conſiderable doſes. Dr. Saunders directs the following in ſome febrile affections where a gentle ſedative and ſudorific action are deſirable:

(No. 30.) ℞ Aquæ ammon. acet. ℥ij.
Vin. Antim. tart. ʒj.
Miſt. camphorat. ℥iv. Miſce Sumat cochlearia tria ſexta quaque horâ.

Secondly, The external means ſuited to take off the ſpaſm of the extreme veſſels, are bliſtering and warm bathing.

1. What are the effects of *bliſtering* ſo frequently employed in fevers, is not yet agreed upon among phyſicians. Dr. Cullen is of opinion, that the ſmall quantity of cantharides abſorbed from a bliſtering plaſter, is not ſufficient to change the conſiſtence of the maſs of blood; and therefore, that ſuch a quantity can neither do good by reſolving phlogiſtic lentor if it exiſts, nor do harm by increaſing the diſſolution of the blood ariſing from a putrid tendency in it. The effects of cantharides upon the fluids, therefore, may be entirely neglected. The inflammation produced by the application of cantharides to the ſkin, affords a certain proof of their ſtimulant power: but in many perſons the effect of that ſtimulus is not conſiderable; in many it is not communicated to the whole ſyſtem; and even when it does take place in the whole ſyſtem, it ſeems to be taken off very entirely by the effuſion and evacuation of ſerum from the bliſtered part. It may be concluded, therefore, that neither much good is to be expected, nor much harm to be apprehended, from the ſtimulant power of bliſtering; and the certainty of this concluſion is eſtabliſhed by the great benefit ariſing from the proper practice of bliſtering in inflammatory diſeaſes. Much has been imputed to the evacuation made by bliſtering; but it is never ſo conſiderable as to affect the whole ſyſtem; and therefore can neither by a ſudden depletion relax the ſanguiferous ſyſtem, nor by any revulſion affect the general diſtribution of the fluids. The evacuation, however, is ſo conſiderable as to affect the neighbouring veſſels; and the manifeſt utility of bliſtering near the part affected in inflammatory diſeaſes leads us to think, that bliſtering, by deriving to the ſkin, and producing an

effuſion there, relaxes the ſpaſm of the deeper-ſeated veſſels. It is in this manner, moſt probably, that the tumor of a joint, from an infuſion into the cellular texture under the ſkin, takes off the rheumatic pain formerly affecting that joint. Analogous to this, probably, is the good effect of bliſtering in continued fevers; and ariſes from the relaxation of the ſpaſm of the extreme veſſels by a communication of the bliſtered part with the reſt of the ſkin. A bliſter may be employed at any period in continued fevers; but it will be of moſt advantage in the advanced ſtate of ſuch fevers, when the reaction being weaker, all ambiguity from the ſtimulating power of bliſtering is removed, and when it may beſt concur with other circumſtances tending to a final ſolution of the ſpaſm.

From this view of the matter, it will appear, that the parts of the body to which bliſters ought to be applied is indifferent, except upon the ſuſpicion of topical affection, when the bliſtering is to be made as near as poſſible to the part affected. Whether ſinapiſms and other *rubifacientia* act in a manner analogous to what has been ſuppoſed of bliſtering, may be doubtful; but their effects in rheumatiſm and other inflammatory diſeaſes render it probable.

2. The other external means of taking off the ſpaſm of the extreme veſſels is warm bathing. This was frequently, and in different circumſtances, employed by the ancients; but has, till of late years, been neglected by modern phyſicians. As the heat of the bath ſtimulates the extreme veſſels, and, with the concurrence of moiſture, alſo relaxes them, it ſeems to be a very ſafe ſtimulus, and well ſuited to take off the ſpaſm affecting theſe veſſels. It may be applied to the whole body by immerſion; but this is in many reſpects inconvenient; and whether ſome of the inconveniences of immerſion might not be avoided by a vapour-bath, is not yet determined by experience; but from extenſive experience it appears, that moſt of the purpoſes of warm bathing can be obtained by a fomentation of the legs and feet, if properly adminiſtered, and continued for a due length of time, not leſs than an hour. The marks of the good effect of ſuch a fomentation are, the patient's bearing it eaſily, its relieving delirium, and inducing ſleep.

The following caſe of ſynocha, by *Mr. James Moore*, of London, and the remarks which accompany it, ſeem very well worth the reader's attention.

"Synocha, or *pure inflammatory fever*" (ſays Mr. Moore), "is a diſeaſe ſo rare in this country, that many experienced practitioners have doubted its exiſtence. I think the following caſe, which I lately attended, is unqueſtionably an example of it.

"J. H. is thirty-one years of age; he is a tall ſtout man, of a florid complexion, and of a full ſanguine habit. From a parti-

cular cauſe, he has for above a year laboured under a depreſſion of ſpirits, and unfortunately he was lately terrified to a great degree. As his mind continued in a ſtate of alarm, there is reaſon to believe that this was the remote cauſe of the fever which enſued.

" The induſtrious Hoffman, in enumerating the cauſes of fevers, mentions, firſt, '*vehementes animi commotiones, terror imprimis et ira.*'

" This young man, though haraſſed by theſe terrible paſſions, endeavoured to ſuppreſs all appearance of them; and as he was in the country, and did not complain when he firſt felt himſelf indiſpoſed, I cannot with certainty fix the firſt day of the fever. Indeed, this in many caſes is impoſſible, the beginning of diſeaſes being often imperceptible.

" However, according to the beſt conjecture I can make, the fever commenced October 29th, when he perceived a chilline's all over his body: but for ſeveral days before he was unwell, and had fallen off in his appetite.

" The ſecond day of the fever, ſickneſs occurred, though not in ſuch a degree as to excite vomiting, and in the night he broke out into a profuſe perſpiration.

" The third day, the perſpiration continuing, he kept his bed, and complained of head-ach. An opening medicine was given him.

" The fourth morning he was better, and ſat up in the day; but grew worſe towards the evening. He ſtarted from bed during the night, and was kept in a continual ſtate of terror, from believing he ſaw frightful apparitions.

" The fifth day he dreſſed himſelf, got upon horſe-back, and rode to town, which was a diſtance of twelve miles. He complained very little, but was thought to be in a ſtrange ſtate.

" The ſixth day I was conſulted. I found him up, and when I enquired how he was, he told me he had only a pain in his forehead. His face was redder than uſual, and his eyes were ſlightly inflamed. The expreſſion of his countenance denoted ſurpriſe; and the anſwers to the queſtions I put to him, marked a confuſion of intellect.

" His pulſe was ſtrong, hard, and beat eighty-eight ſtrokes in a minute. The ſkin was hot, the tongue was moiſt and whitiſh, the urine red, with a dark ſediment; the bowels regular.

" He was put to bed, and as the delirium augmented, it was found neceſſary to guard him carefully.

" The diſeaſe increaſed, though with occaſional remiſſions, for four days: his pulſe was always ſtrong and regular, and once was perceived as high as ninety-ſix; his ſkin felt hot, and rather moiſt; he was diſpoſed to conſtipation, was thirſty, and ſhewed no nauſea

or want of appetite, but ſwallowed readily whatever was given him.

" On the tenth day he was quite furious, and could hardly be kept in bed, though ſtrapped down, and reſtrained by two ſtrong men. That night a profuſe ſweat broke out, and he became tranquil.

" The eleventh day I found him perſpiring freely. His pulſe was ſoftened, and diminiſhed in frequency, and his anſwers were rational. This proved the *criſis* of the fever; for, on the twelfth morning, his pulſe had ſunk to eighty, and his only complaint was weakneſs.

" The treatment employed during the five days he was under my charge, conſiſted ſimply of two purgatives, and a draught containing one-fourth of a grain of tartar emetic, and two drachms of the aqua ammoniæ acetatæ, which was exhibited regularly every ſix hours. This, I imagine, contributed to excite the critical perſpiration.

" I did not venture on bleeding, becauſe it was the ſixth day of the fever before I ſaw him.

" His diet conſiſted of liquids, ſlightly nutritious.

" The definition of ſynocha given by Dr. Cullen, is ' Calor plurimum auctus, pulſus frequens, validus et durus; urina rubra, ſenſorii functiones parum turbatæ.' This caſe differed in the laſt characteriſtic; but as Dr. Cullen acknowledged that he never ſaw the diſeaſe, he may have erred in the deſcription. It is alſo probable, that the mental derangement in this inſtance was much greater than uſual.

" This caſe was ſo ſtrongly marked, that there could be little danger, without groſs inattention, of miſtaking it for a fever of the *typhoid* kind.

" The loſs of his ſtrength was ſo ſlight, that the patient rode twelve miles on the fifth day, without appearing fatigued, or going to bed afterwards: and when the diſeaſe left him altogether, the debility was much leſs than what occurs after fevers in general.

" The natural functions were little diſturbed: his thirſt was not exceſſive; and he took whatever was allowed him without diſguſt.

" The pulſe was ſtrong and hard, the ſkin hot and ſoft; every one of which particulars is the reverſe of what occurs in typhus. And the tongue, inſtead of having a dry, red, brown, or black appearance, was always moiſt, and rather white.

" As moſt of the functions of the body were ſo little diſordered, *delirium* was unexpected. It commenced ſo early as the fourth night, and continued till the criſis with augmenting violence. Perhaps the moral cauſes, which it is believed operated in exciting the diſeaſe, contributed to this effect.

" The indications in this fever are very oppoſite from thoſe of

typhus, it is therefore of the utmoſt importance that they ſhould be diſcriminated.

"Synocha certainly very much reſembles the ſymptomatic fever attendant upon phlegmon; and, therefore, it has not unnaturally been termed the inflammatory fever. The common ephemera is undoubtedly of the ſame ſpecies, which, notwithſtanding its name, often continues three days: and the ſynocha ſeems to me preciſely the ſame malady, in a more violent degree, and running on for a longer period.

"As many caſes ſimilar to the above have been narrated by authors, it appears ſtrange that the reality of this diſeaſe ſhould be now queſtioned."

The author thinks with great reaſon, that the *attempt to ſimplify diſeaſes*, and particularly fevers, has been carried to an erroneous length.

"The ſpecies" ſays he, "that are common in any country, are perhaps not numerous; but it is clear, from the various accounts we receive, that fevers have different ſymptoms, and require a different treatment in every part of the globe."

GENUS V. TYPHUS; the *Typhous* FEVER.

Typhus *Sauv.* Gen. 82. *Sag.* 677.

I. Typhus mitior, or the *Slow Nervous* FEVER. Sp. I. var. 1.

Febris maligna, hectica, convulſiva, ſive lues *νευρωδης*, *Willis*, de morb. convulſiv. cap. 8.
Febris peſtilens, *Fracaſtor.* de morb. contag. L. II. cap. 4.
Febris peſtilens ſine charactere veneni, *Foreſt.* L. VI. obſ. 26.
Febris hectica peſtilens, *Foreſt.* L. VI. obſ. 32.
Febris nova ann. 1685, *Sydenham*, Sched. monitor.
Febris putrida nervoſa, *Wintringh.* Com. Noſolog. ad. ann. 1720, 1721.
Febris lenta nervoſa, *Huxham* on fevers, chap. 8.
Febris contagioſa, *Lind* on fevers and infection, *paſſim.*
Typhus nervoſus, *Sauv.* ſp. 2.
Typhus comatoſus, *Sauv.* ſp. 3.
Tritæophya typhodes Mangeti, *Sauv.* ſp. 11. *Raym. Fort*, de febribus.

1. *Deſcription.*] Of all the deſcriptions we have of the nervous fever, that of Dr. Huxham is perhaps the beſt. According to him, the patient at firſt grows ſomewhat liſtleſs, and feels ſlight chills and ſhudderings, with uncertain fluſhes of heat, and a kind of wearineſs all over, like what is felt after great fatigue. This is always attended with a ſort of heavineſs and dejection of ſpirit, and

more or less of a load, pain, or giddiness of the head; a nausea and disrelish of every thing soon follow, without any considerable thirst, but frequently with urging to vomit, though little but insipid phlegm is brought up. Though a kind of lucid interval of several hours sometimes intervenes, yet the symptoms return with aggravation, especially towards night; the head grows more giddy or heavy; the heat greater; the pulse quicker, but weak; with an oppressive kind of breathing. A great torpor, or obtuse pain and coldness, affects the hinder part of the head frequently, and oftentimes a heavy pain is felt on the top all along the *coronary future*; this, and pain of the back part of the head, generally attend nervous fevers, and are commonly succeeded by some degree of a delirium. In this condition the patient often continues for five or six days, with a heavy, pale, sunk countenance; seemingly not very sick, and yet far from being well; restless, anxious, and commonly quite void of sleep, though sometimes very drowsy and heavy; but although he appears to those about him actually to sleep, he is utterly insensible of it, and denies that he does so. The pulse during all this time is quick, weak, and unequal; sometimes fluttering, and sometimes for a few moments slow; nay, even intermitting, and then, with a sudden flush in the face, immediately very quick, and perhaps soon after surprisingly calm and equal; and thus alternately. The heats and chills are as uncertain and unequal; sometimes a sudden colour and glow arise in the cheeks, while the tip of the nose and ears is cold, and the forehead at the same time in a cold dewy sweat. Nay, it is very common, that a high colour and heat appear in the face, when the extremities are quite cold. The urine is commonly pale, and often limpid: frequently of a whey colour, or like vapid small-beer, in which there is either no manner of sediment, or a kind of loose matter like bran irregularly scattered up and down in it. The tongue at the beginning is seldom or never dry or discoloured, but sometimes covered with a thin whitish mucus: at length, indeed, it often appears very dry, red, and chapped, or of the colour of pomegranate-rind; but this mostly at the close of the disease: yet, however dry the tongue and lips seem, the patient scarce ever complains of thirst, though sometimes of a heat in the tongue. About the seventh or eighth day, the giddiness, pain, or heaviness of the head become much greater, with a constant noise in it, or *tinnitus aurium*; which is very disturbing to the sick, and frequently brings on a delirum. The load on the præcordia, anxiety and faintness, grow much more urgent; and they often fall into an actual deliquium, especially if they attempt to sit up; cold sweats suddenly come out on the forehead, and on the backs of the hands (though at the same time there is too much heat in the cheeks and palms), and as suddenly go off. If the urine now grows more pale and limpid, a delirium is certainly to be expected, with universal tremors

and *subsultus tendinum*; the delirium is seldom violent, but as it were a confusion of thought and action, muttering continually to themselves, and faultering in their speech. Sometimes they awake only in a hurry and confusion, and presently recollect themselves, but forthwith fall into a muttering dozy state again. The tongue grows often very dry at the height, especially in its middle part, with a yellowish list on each side, and trembles greatly when the sick attempts to put it out. Frequently profuse sweats pour forth all at once, about the ninth, tenth, or twelfth day, commonly coldish and clammy on the extremities; oftentimes very thin stools are discharged, and then nature sinks apace; the extremities grow cold, the nails pale or livid; the pulse may be said to tremble and flutter, rather than beat, the vibrations being so exceeding weak and quick that they can scarce be distinguished; though sometimes they creep on surprisingly slow, and very frequently intermit. The sick become quite insensible and stupid, scarce affected with the loudest noise or the strongest light; though, at the beginning, strangely susceptible of the impressions of either. The delirium now ends in a profound coma, and that soon in eternal sleep. The stools, urine, and tears, run off involuntarily, and denounce a speedy dissolution, as the vast tremblings and twitchings of the nerves and tendons are preludes to a general convulsion, which at once snaps off the thread of life. In one or other of these ways are the sick carried off, after having languished for fourteen, eighteen, or twenty days; nay, sometimes much longer. Most patients grow deaf and stupid towards the end of this disease (some extremely deaf), though too quick and apprehensive at the beginning, insomuch that the least noise or light greatly offended them. Many, from their immoderate fears, seem to hurry themselves out of life, where little danger is apparent at the beginning; nay, some will not allow themselves to sleep, from a vain fear of dozing quite away; and others from the vast hurry, anxiety, and confusion they are sensible of either during sleep or at their waking.

2. *Causes of, and persons subject to, the disorder.*] The nervous fever is most frequently the consequence of contagion. It most commonly attacks persons of weak nerves, a lax habit of body, and a poor thin blood; those who have suffered great evacuations, a long dejection of spirits, immoderate watchings, studies, fatigue, &c.; also those who have used much crude unwholesome food, vapid impure drinks, or who have been confined long in damp foul air; who have broken the vigour of their constitutions by salivations, too frequent purging, immoderate venery, &c. Hence we see how the disease is connected with an extreme debility of the nervous system; for, when people are prepared for this fever by having their nerves already weakened, the contagious particles immediately attack the nervous system, without so much affecting

the state of the blood or juices, though the latter are greatly affected in the putrid malignant fever.

3. *Prognosis.*] In nervous fevers, the prognosis is very much the same with that of the putrid malignant kind. And although death be not so frequent as in that modification of fever, yet it may justly be considered as very fatal.

4. *Cure.*] As this fever is produced by a contagion affecting the nervous system of a person already debilitated, and thus producing weakness in an extreme degree, we have now occasion to consider Dr. Cullen's *two indications* of cure omitted under the *Synocha*; namely, to remove the cause and obviate the effects of debility, and to correct the putrescent tendency of the fluids; for though in the beginning of nervous fevers the tendency to putrefaction be not remarkable, it becomes exceedingly great towards their conclusion.

α. In answering the first indication, Dr. Cullen observes, that most of the sedative powers inducing debility cease to act soon after they have been first applied; and therefore the removing them is not an object of the present indication. There is only one which may be supposed to continue to act for a long time, and that is the contagion applied; but we know nothing in the nature of contagion that can lead us to any measures for removing or correcting it. We know only its effects as a sedative power inducing debility, or as a ferment inducing a tendency to putrefaction in the fluids, the former of which at present falls under our consideration. —The debility induced in fevers by contagion, or other causes, appears especially in the weaker energy of the brain; but in what this consists, or how it may be restored, we do not well know; but as nature, seemingly for this purpose, excites the motion of the heart and arteries, we must ascribe the continuance of the debility to the weaker reaction of the sanguiferous system: the means, therefore, which we employ for obviating debility, are immediately directed to support and increase the action of the heart and arteries; and the remedies employed are tonics or stimulants.

In contagious diseases we know, both from the effects which appear, and from dissections, that the tone of the heart and arteries is considerably diminished; and that tonic remedies are therefore properly indicated. We are to consider these remedies as of two kinds: 1. The power of cold; 2. That of tonic medicines.

The power of cold as a tonic in fevers may be employed in two ways: either as thrown into the stomach, or as applied to the surface of the body. As we have already observed, that the power of cold may be communicated from any one part to every other part of the system, so it will be readily allowed that the stomach is a part as fit as any other for this communication, and that cold drink taken into the stomach may prove an useful tonic in fevers. This the

experience of all ages has confirmed; but at the same time it has been frequently observed, that, in certain circumstances, cold drink taken into the stomach has proved very hurtful; and therefore that its use in fevers requires some limitations. What these limitations should be, and what are all the circumstances which may forbid the use of cold drink, it is difficult to determine; but it seems clearly forbidden in all cases where a phlogistic diathesis prevails in the system, and more especially when there are topical affections of an inflammatory nature.

The other method of employing cold as a tonic, is by applying it to the surface of the body, as a refrigerant power fit to moderate the violence of reaction; but probably it may here also be considered properly as a tonic, and useful in cases of debility. Not only cool air, but cold water also may be applied to the surface of the body as a tonic. The ancients frequently applied it with advantage to particular parts as a tonic; but some consider it a discovery of modern times, that, in the case of putrid fevers attended with much debility, the body may be washed *all over* with cold water. This was first practised at Breslaw in Silesia, as appears from a dissertation under the title of *Epidemia Verna, quæ Wratislaviam anno* 1737 *afflixit*, to be found in the *Acta Nat. Curios.* vol. x. And from other writers it seems, that the practice passed into some of the neighbouring countries; but in this island it does not appear that we had any experience of it till an account appeared of the experiments made at the Liverpool infirmary by Dr. Currie. These, as we shall presently shew, have led to other trials, most of which have proved strongly recommendatory in their results, though not uniformly successful.

The first author who notices the use of water in diseases, together with almost every thing important to the science of medicine, is Hippocrates, who appears to have been a strenuous advocate for the use of it, both as an internal and external remedy. It may be remarked, however, that Hippocrates in his account of epidemics, which is wholly employed in treating upon fevers, delivers the particular history of the disease, and rarely mentions the remedies. We are therefore not able confidently to decide, whether he always used the cold affusion in cases of fever; although we may conclude that it was not neglected or disregarded by him, since we find in Case 7, book 1, the patient drank largely of cold water, and had it poured upon his head, which moderated the delirium, and he became rational and recovered, having at the same time a critical hæmorrhage from the nose. Sir John Floyer, in his Psychrolusia, or History of Cold Bathing, has observed, that Hippocrates describes, in his Aphorisms, the virtues of hot and cold water, without mentioning affusions, fomentations, or baths; but the το ψυχρὸν or το θερμὸν, relate to all of them equally. The term used by Hippocrates is κατακλυσμος or καταχυσις, which signi-

ſies perfuſion, or affuſion, and was performed by a ſervant, who poured the water upon thoſe perſons who were recommended to try its effects in various diſeaſes; and the ſame virtues are aſcribed by him to this method as to cold baths. If the internal uſe of cold water was only known to Hippocrates, he would not have given directions about affuſions, lotions, and fomentations, as he has done in his tracts upon the uſe of liquids, and upon the diet in acute diſeaſes; and eſpecially as the latter part of the tract De liquidorum uſu, is entirely upon the effects of καταχυσις, or affuſion. Beſides, it ſeems probable that he was well acquainted with the neceſſary cautions to be attended to in applying the affuſion, ſince, to ſupply the deficiency of thermometrical obſervations, he adviſes the ſkin of the patient, or of the perſon who pours on the water, to be the criterion of the degree of cold or heat; and he cautions againſt proceeding to any great exceſs, which might prove injurious. In the cure of typhus he adviſes to refrain from immerſion for the firſt few days, but recommends cloths wetted with cold water to be applied where the patient complains moſt of heat; which method anſwers to the "lavatio frigida," as practiſed by Dr. Gregory at Edinburgh. Hippocrates, after mentioning the advantages of drinking and bathing in cold water, obſerves that it produces more powerful effects by affuſion, δυνατωτερον καταχσιν; and as he has ſtudiouſly avoided the appearance of empiriciſm, by combining reaſoning with events, he thought the cold water produced heat and ſweat, and that the heat cured the diſeaſes for which the uſe of water was moſt effectual.

Although Aſclepiades, Celſus, Galen, and many other old authors, have noticed the uſe of cold water, it does not appear that they generally underſtood the affuſion of it upon the ſurface of the body, or that ſuch a mode of applying it was in great repute among them, Yet we find Aretæus, in his chapter De curatione Phreniticorum, adviſes the liberal affuſion of cold water upon the patient; and Galen alſo practiſed ablution in ardent fevers; and in Lib. x. De Methodo Medendi, he has laid down rules for the proper application of it. And other writers have recommended in vertigo and inveterate head-achs, "ut caput frigidâ aquâ perfundant." The antiquity of the external application of cold water may perhaps be further illuſtrated by the relation of Auguſtus Cæſar's caſe, as mentioned in his life by Suetonius: "Cum etiam diſtillationibus jecinore vitiato ad deſperationem redactus, contrariam et ancipitem rationem medendi neceſſario ſubiit, quia calida fomenta non proderant, frigidis curari coactus, auctore Antoniâ Musâ."—Sueton. lib. ii.

Hiſtory informs us that the American Indians have always practiſed cold immerſion for the cure of fevers, to which they are particularly ſubject; nor is this practice confined to warm climates, ſince the northern nations make uſe of that cuſtom both for the

prevention and cure of diſeaſes. The affuſion and ablution of the body might firſt take its origin from the cuſtom of purifying the body with water, in great eſteem among the patriarchs, and imitated from them by the Egyptians, Greeks, and Romans; and the uſe of it, probably, became more general at the introduction of Chriſtianity, when the ceremony of baptiſm was univerſally practiſed by what was called the trine immerſion, or by placing the perſons in the font and pouring water on their heads and bodies three times. In a work publiſhed about the beginning of the preſent century, entitled Pſychroluſia, or Hiſtory of Cold Bathing, by Sir John Floyer and Dr. Baynard, the uſe of cold water applied to the ſurface of the body is much recommended and inſiſted upon for the cure of almoſt all diſeaſes; and although that book partakes too much of what would juſtly be called medical enthuſiaſm, yet it contains many important facts and uſeful obſervations. It ſeems rather remarkable that Dr. Currie ſhould not have referred to this book among others which he has noticed, ſince it would have furniſhed ſome ſtriking facts of no ſmall conſequence to his ingenious theory and judicious practice. Dr. Baynard mentions many caſes of perſons who have leaped into a pond, or any other water, in their delirium from fevers, and not one ever received any harm, but were thereby preſently cured. And he adduces inſtances of maniacal perſons being plunged into cold water, and having ten or twelve pails of water thrown over them during the paroxyſm of inſanity; and refers to a remarkable caſe related by Dr. Willis, in his Chapter de Delirio & Phrenitide, where the ſame means were uſed with equally good ſucceſs. No other work of importance, concerning the application of cold water to the human body, appeared till the year 1785, when an ingenious eſſay was publiſhed by Mr. Rigby, of Norwich, "On the Theory and Production of Animal Heat, and its Application in the Treatment of Diſeaſes." As far as relates to the ſimple abſtraction of heat from the ſurface, the author of that Eſſay ſeems to have ſaid as much as has been ſince repeated by Dr. Currie and others; and the obſervations it contains upon the treatment of cutaneous diſeaſes (eſpecially ſmall-pox, ſcarlatina, and meaſles, and local inflammations) are valuable, and deſervedly claim attention. Hence it appears, that the external uſe of cold water has been known and practiſed from the earlieſt periods down to the preſent time; and this practice has not ariſen as the mere ſuggeſtion of hypotheſis, or the product of ſpeculative enquiry, but has been eſtabliſhed and confirmed by long experience. Yet, after all that can be found in ancient authors upon the affuſion in fevers and other diſeaſes, it will be readily acknowledged that their practice was unconfirmed, and the concluſions drawn from their experience were vague and uncertain. And it will be as readily acknowledged, that we are greatly indebted to Dr. Currie, who, by a diligent inveſtigation, conducted with judgment and

accuracy, has corrected the errors and supplied the defects of preceding writers, and has been a valuable agent in establishing the use of a remedy in the art of medicine, endued with the most efficacious properties, and admirably calculated to produce the greatest benefit to all mankind.

We shall now adduce, from recent publications on the subject, the different testimonies of medical men with regard to the efficacy of this practice. Dr. Garnett, professor of Natural Philosophy and Chemistry in the Royal Institution, publishes the following remarks in the Medical and Physical Journal.

"No greater improvement has lately taken place in medicine than in the treatment of Fevers, by the external use of cold water; a mode which was first, I believe, practised by Dr. Wright, but since elucidated by the acute reasoning and confirmed by the experience of Dr. Currie. I have several times witnessed, not without some degree of astonishment, the wonderful efficacy of this plan; and I only presume to state a few facts, with a view of drawing the attention of the faculty in Britain to this point; for, though the plan is used by some very judicious practitioners, it is by no means general. I am, however, convinced from experience, that there are few cases of *typhus* in which the pulse exceeds 100, where the skin is dry, and its heat considerably above the natural heat of the human blood (circumstances which ought to be diligently attended to), where a cure may not speedily be effected by it, provided it be employed within the first six or eight days from the attack of the fever. Among many other cases, I shall only give the following:

"I was desired to visit Mr. T. a respectable manufacturer in Glasgow, who laboured under a mild kind of typhus, from which, however, he did not recover so quickly as was expected. It was on the twentieth day of the fever that I saw him, and I prescribed for him the oxymuriat of potash, a remedy which I have been in the habit of using in this complaint for some years with great success. He grew better daily; but before he was perfectly recovered, Mrs. T. who had given him almost constant attention, was attacked with symptoms of fever; I did not see her till the third day after the attack, when I found her pulse not less than 130; the heat of her skin 106°, without any moisture; her eyes had a considerable degree of wildness, and her tongue was quite brown and parched. In short, I think I had never seen the disease at the same period attended with worse symptoms.

"As this seemed a case exactly adapted to the plan laid down by Dr. Currie, I proposed it to the surgeon who attended her along with me, a very intelligent practitioner, who immediately assented to it. She was directed to be taken out of bed, and placed in a large tub on a stool, and a large bucket of cold water, in which about a pound of common salt had been dissolved, was thrown

upon her; her ſkin was immediately wiped dry, and ſhe was put to bed. In about ten minutes afterwards I went into the room, and found the pulſe 94; the heat of the ſkin 96°. On aſking her how ſhe felt herſelf, ſhe replied, as well as ever ſhe was in her life: I left her, directing the affuſion to be had recourſe to again if the febrile ſymptoms returned during the night. I ſaw her the next morning, and found her without any fever, of which ſhe had no return.

"Another patient on whom I tried this remedy, was Miſs R. aged 17. She had taken the infection from her brother, who had recovered very ſlowly from a typhus of the worſt kind. She was attacked with ſhivering, ſucceeded by great heat, and pain in the back; her pulſe was 128; the heat of the ſkin 102°, and dry; her tongue parched and brown, though not quite ſo bad as in the former caſe. The cold water was uſed in the ſame manner, and in a quarter of an hour the febrile ſymptoms had vaniſhed; the pulſe was under 100, and the heat of the ſkin natural. The febrile ſymptoms, however, returned in about ſix hours, but went off on repeating the affuſion; they returned again in the courſe of the next day, but were again overcome; ſhe was obliged to uſe the affuſion five times; but at laſt, after forty-eight hours from the firſt affuſion, the complaint had totally left her.

"Two days after this, another brother of Miſs R.'s was ſeized with ſymptoms of fever, in which the heat of the ſkin, pulſe, and tongue, were much the ſame as in his ſiſter's caſe; and he was delirious, conſtantly wiſhing to go to the grammar ſchool to receive a prize to which he was entitled. The affuſion was uſed in the ſame manner as in the preceding caſes; the febrile ſymptoms immediately vaniſhed—the delirium left him—his pulſe and heat became natural—he fell into a ſound ſleep—perſpired profuſely; and in the morning found himſelf ſo well, that I am pretty ſure he did go to the grammar ſchool to claim his prize."

"From various opportunities (ſays Mr. Schaw, a Navy Surgeon) which I have had of obſerving this method of treatment, and from having frequently put its effects to the teſt myſelf, I feel fully warranted in aſſerting that, in every caſe where it is judiciouſly employed, its efficacy will invariably be evinced. In country practice, when the general affuſion could not be uſed on account of the prejudices of the lower order of men, I have ſeen different inſtances, where even the partial application of cold water to the face, neck, breaſt, and arms, was of infinite ſervice, and, indeed, I hardly ever ſaw it uſed without ſome very palpable advantage ariſing."

This writer farther remarks, that in three caſes which fell under his own inſpection, where catarrhal ſymptoms attended the fever, the cold ablution appeared to do evident miſchief, by increaſing the cough, and conſequent irritation, to ſuch a pitch as almoſt totally

precluded reſt; which, of neceſſity, led to a diſcontinuance of the remedy. Mr. Schaw relates the following caſe:

"A. M. a ſailor, ætat. 30, of a robuſt healthy conſtitution, was attacked, on the 22d of October laſt, with all the uſual ſymptoms of fever, which he attributed to cold. He had an emetic given, which operated very well as ſuch, but produced no other ſenſible effect. On the 23d, in the morning, his pulſe was 116 in the minute, his ſkin very hot; he had great thirſt, and complained of ſevere head-ach: had a ſtool during the night. My hand acted the part of a thermometer, and I directed the application of cold water, which was performed while I felt his arm with one hand, and held my watch in the other to mark the change I expected. The affuſion was ſcarce finiſhed when his pulſe fell to 90; he was then dried and put to bed. I viſited him in half an hour, pulſe 92, and regular, ſkin cool, head-ach much relieved, and he felt wonderfully refreſhed. Six o'clock, P. M. pulſe 100, heat above natural, head-ach increaſed ſince the afternoon. The operation was repeated with the ſame effect as in the morning, reducing the pulſe to 70. In an hour afterwards, when I again viſited, he ſaid he felt 'very eaſy,' his head-ach was nearly removed, and the heat of his ſkin was very little, if at all, above natural; I ordered an opiate to be given at bed-time.

"24th. Eight o'clock, A. M. pulſe 76; ſlept well during the night, has little head-ach, ſkin very little above natural heat; had a ſtool this morning.

Repetatur affuſio aquæ frigidæ.

"7 P. M. Pulſe 72, ſkin of natural heat, no head-ach; has been walking about great part of the afternoon, and ſays he feels 'quite ſtrong.' No farther application was neceſſary.

"D. L. ætat. 25, of a healthy and ſtrong conſtitution, was attacked, in the night of the 21ſt of February laſt, with cold ſhivering, followed by increaſed heat, head-ach, nauſea, and ſlight vomiting. I ſaw him about nine next morning. The vomiting had ceaſed; the nauſea was likewiſe gone; pulſe 112, and ſtrong; ſkin hot: face flushed; breathing a little hurried, but without pain of the breaſt, or cough; head-ach very acute; tongue clean, of a bright red colour; much thirſt. I ordered, and ſaw performed copiouſly, the cold affuſion. The ſhock was conſiderable, but the effect almoſt inſtantaneous. The pulſe immediately fell to 80, and the head-ach was greatly relieved.

"At one the pulſe was 90, and the heat above the natural ſtandard: I repeated the remedy; which ſucceeded ſo well, that in the evening the head-ach was removed, the ſkin of natural heat, and he recovered without any farther application.

"Theſe two caſes, I think, ſhew pretty pointedly the advantage of an early employment of this ſimple and uſeful remedy. I have made uſe of it too in the more advanced ſtages of typhus, and, I

think, with very happy effects. It evidently mitigated the violence of the febrile ſymptoms, and appeared to ſuppreſs the tendency to delirium; and although the diſeaſe generally ran out its courſe, yet it ſeemed to aſſume a milder form, and to be attended with leſs danger, when this treatment was adopted."

Mr. Martineau, of Norwich, gives his teſtimony to the utility of cold affuſions in typhus, in the following terms:

"In November, 1798 (ſays he), a young man, a farmer, about twenty years old, living four miles from Norwich, came to me, complaining of great laſſitude, head-ach, loſs of appetite, and coſtiveneſs; he had a quick tremulous pulſe; great dejection was marked in his countenance, and, in ſhort, every appearance of typhus. This was on a Thurſday, and he had been complaining from the preceding Saturday. He was much fatigued with his ride, and it was with difficulty he returned home. I ordered him an emetic to be taken that evening, and a gentle doſe of opening medicine for the following morning. I heard no more of him until the Saturday, when I was requeſted to go over to him. I found him at ſix that evening with every ſymptom growing worſe, and his debility much increaſed. I preſcribed a drachm of bark, to be given every two hours, and an opiate at bed-time.

"Sunday evening his pulſe was 110, his tongue clear, ſkin hot and dry, his weakneſs greater. He had taken the bark very regularly, which I deſired might be continued, as well as his opiate at bed-time.

"Monday, at ſix in the evening, pulſe as yeſterday, heat pungent, head-ach with wandering, but not abſolutely delirious, his ſtrength leſs. The bark had purged him, notwithſtanding laudanum had been given twice, beſides the night draught.

"In this ſtate, with the bark purging, and the diſeaſe making an alarming progreſs, I determined, although I was unable to meaſure his heat, and too far from home to wait for a thermometer, to make trial of the affuſion of cold water. My patient was taken out of bed, and while he was ſupported, ſtanding naked in a tub, I poured the largeſt hand-baſon of pump water all over him. The ſhock was conſiderable to him, and the father and mother, who were preſent, thought, I believe, I ſhould be the death of their ſon. He was wiped dry, and immediately returned to bed—his pulſe then beat only 70—he was cool, and ſaid he had not felt himſelf ſo comfortable, and particularly in his head, for many days. Much pleaſed with this effect, but uncertain whether it would laſt, I went down ſtairs, and waited an hour; on my return to him, his pulſe had not quickened, nor had the heat returned. I left orders to repeat the cold water, if he became hot during the night, but there was no occaſion for it; he ſlept well, and had a gentle perſpiration; and although I daily intended repeating the affuſion, had the heat returned, I never found it neceſſary. His ſymptoms ſeem-

ed at once arrested, but continued in a slight degree until the 14th day, when his appetite and natural sleep returned, and he soon after recovered his strength and health.

"I should mention, that from the evening in which the affusion was used, I only ordered two or three smaller doses of bark in a day, conjoined with a few drops of laudanum to check the purging, and twenty-four drops at night until the 14th day, when all medicine was laid aside. The bark, in such a small quantity, can scarcely be supposed to have contributed to the recovery of this patient; and I will add, that in the largest quantity, I never saw it of service, either in stopping of typhus, or moderating the symptoms, unless given in the first two or three days, when I know it will often put a stop to the disease; but it must be given with the same assiduity as is required to check the return of a true intermittent. It is the time of giving as well as quantity of bark, which must render it successful in typhus.

"Dr. Currie in his admirable work mentions, that he finds the greatest benefit from affusion, when used in the first days of fever; and this I believe, for the very reason which makes the bark, and some other remedies, chiefly useful in the commencement, viz. that if the disease has had time to obtain its true character, or, in the language of Dr. Darwin, 'the morbid febrile catenation is strongly formed,' it will go on its own duration, in spite of our efforts to stop its natural termination. In my patient, however, the affusion was not tried till the ninth day; still the sudden impression made by it was so powerful as to produce such a mitigation of every symptom as to leave no farther apprehension for his safety, although no positive crisis came on before the fourteenth day, when the appetite and sleep marked the conclusion.

"In January, 1799, the Lincolnshire Militia were quartered in this city; their barracks were terribly crowded, ill ventilated, below the surface of the ground, and damp; the weather was extremely cold, and the men, after parade, frequently complained of having caught cold. After a short time the disease put on a mixed character of typhus and peripneumonia, the peripneumonia putrida of Sauvages, and many died. I was requested at this time by the colonel, Lord Buckinghamshire, and Mr. Cooper, the surgeon of the regiment, who had been indefatigable in his attention to the men, to visit the hospital, which was a small house, in which were thirty, in all the stages, from an alarming commencement to a fatal conclusion. Two were brought in the evening, while I was there, who had been ill a *few days* only; and as there was considerable heat on the skin, I recommended the affusion, which was immediately complied with. The pulmonic symptoms might have been considered an objection to the trial, but the fatality of the disease led me to adopt a practice, which at first I should not have had courage to have employed. In these cases no very *immediate* relief was

given, but both the men recovered with leſs ſevere ſymptoms than moſt of their comrades; bliſters, however, were applied to them, which had not been uſed in the other caſes. I have mentioned theſe two caſes, to ſhew that even with pneumonic affection there aroſe no *inconvenience* from the application of cold water. An immediate ſtop was put to the contagion by the men being, the day after my viſit, ſent out of the barrack to ſeparate houſes."

In March laſt, a pupil of Mr. Martineau's viſited a poor boy, ten years old, who was in the fifth day of a typhus, four of which he had been confined to his bed. He at firſt gave him an emetic, and ſome bark; but not finding him better the following evening, he applied the *affuſion of cold water*, during the hot ſtage of the evening exacerbation. The pulſe immediately fell from 120 to 98, the head-ach and heat were greatly diminiſhed, and ſome ſleep and a gentle perſpiration followed. The affuſion was uſed the next day at noon, and again at night, with the ſame advantage, and once more the following evening. On the 9th day, the fever terminated, and the boy rapidly recovered, having taken no medicine after the application of the water.

"A fortnight afterwards, a brother of the above, aged eight years, was ſeized with the ſame fever; the affuſion was applied on the *ſecond* day with the greateſt advantage, as he had no return of fever for four days, when ſome cold winds blowing upon him in bed, produced a relapſe; the ſymptoms were more violent, and delirium and coma were added. On the evening of the ſecond day of the ſecond attack, when the heat was very conſiderable, cold water was thrown all over him, and with an aſtoniſhing good effect, for he had no return from that time, and ſoon recovered, without having taken any medicine during the whole period of the diſeaſe.

"On the 8th of May, the ſiſter of the two boys, a girl of ſix years, was attacked with typhus, but with ſymptoms leſs violent. The affuſion was applied twice at the commencement of the fever, and ſhe ſoon recovered without any medicine."

The above caſes cannot but prove an additional inducement to the practice they are intended to eſtabliſh. Many circumſtances, however, ought to be taken into conſideration before its general application; and we cannot do better than refer ſuch of our readers as have not already peruſed Dr. Currie's work, to the following cautionary remark in the book itſelf.—"Affuſion may be ſafely "uſed at any time of the day, *when there is no ſenſe of chilline/s pre-* "*ſent, when the heat of the ſurface is ſteadily above what is natural,* "*and when there is no general or profuſe perſpiration.*"

The medicines which have been employed in fevers as tonics are various. If the metallic ſalts have been found uſeful, it is owing probably to their tonic properties alone. The preparations of copper, from their effects in epilepſy, are preſumed to poſſeſs a tonic

power; but whether their uſe in fevers be founded on their tonic or emetic powers, is uncertain. Upon the whole there may, no doubt, occur ſome inſtances of fevers being cured by tonics taken from the mineral kingdom; but the vegetable tonics are the moſt efficacious, and among theſe the Peruvian bark certainly holds the firſt place.

The bark has commonly been conſidered as a ſpecific, or a remedy of which the operation was not underſtood. We muſt obſerve, however, that, as in many caſes the effects of the bark are perceived ſoon after its being taken into the ſtomach, and before it can poſſibly be conveyed to the maſs of blood, we may conclude, that its effects do not ariſe from its operating on the fluids; and muſt therefore depend upon its operating on the nerves of the ſtomach, and being thereby communicated to the reſt of the nervous ſyſtem. This operation ſeems to be a tonic power, the bark being a remedy in many caſes of debility, particularly in gangrene: and if its operation may be explained from its poſſeſſing a tonic power, we may eaſily perceive why it is improper when a phlogiſtic diatheſis prevails; and from the ſame view we can aſcertain in what caſes of continued fever it may be admitted. Theſe caſes are either where conſiderable remiſſions have appeared, when it may be employed to prevent the return of exacerbations, on the ſame footing as it is uſed in intermitting fevers; or in the advanced ſtate of fevers, when all ſuſpicion of an inflammatory ſtate is removed, and a general debility prevails in the ſyſtem; and its being then employed is ſufficiently agreeable to the preſent practice.

Another ſet of medicines to be employed for obviating debility and its effects, are the direct ſtimulants. Theſe, in ſome meaſure, increaſe the tone of the moving fibres; but are different from the tonics, as they more directly excite and increaſe the action of the heart and arteries. This mode of their operation renders their uſe ambiguous; and when an inflammatory diatheſis is preſent, the effects of ſtimulants may be very hurtful; but it is ſtill probable, that in the advanced ſtate of theſe fevers, when debility prevails, they may be uſeful.

Of all the ſtimulants which may be properly employed, wine ſeems to be the moſt eligible. It has the advantage of being grateful to the palate and ſtomach, and of having its ſtimulant parts ſo much diluted, that it can be conveniently given in ſmall doſes; and therefore it may be employed, with ſufficient caution; but it is of little ſervice unleſs taken pretty largely. It may be ſuſpected that wine has an operation analogous to that of opium; and on good grounds. But we can diſtinctly remark its ſtimulant power only; which renders its effects in the phrenitic delirium manifeſtly hurtful; and in the mild delirium, depending on debility, as remarkably uſeful.

β. We muſt now proceed to the other indication of cure, namely, to correct or obviate the tendency in the fluids to putrefaction. This may be done, 1. By avoiding any new application of putrid or putreſcent matter. 2. By evacuating the putrid or putreſcent matter already preſent in the body. 3. By correcting the putrid or putreſcent matter remaining in the body by diluents and antiſeptics. 4. By ſupporting the tone of the veſſels, and thereby reſiſting further putrefaction, or obviating its effects. 5. By moderating the violence of reaction, conſidered as a means of increaſing putrefaction.

The further application of putrid or putreſcent matter may be avoided, 1. By removing the patient from places filled with corrupted air. 2. By preventing the accumulation of the patient's own effluvia, by a conſtant ventilation, and by a frequent change of bed-clothes and body-linen. 3. By the careful and ſpeedy removal of all excremental matters from the patient's chamber. 4. By avoiding animal food.

The putrid or putreſcent matter already preſent in the body, may be evacuated partly by frequent evacuation of the contents of the inteſtines; and more effectually ſtill by ſupporting the excretions of perſpiration and urine by the plentiful uſe of diluents. That which remains in the body may be rendered more mild and innocent by the uſe of diluents, or may be corrected by the uſe of antiſeptics, as the vegetable acids, &c. Theſe laſt are of many and various kinds; but which of them are conveniently applicable, or more particularly ſuited to the caſe of fevers, is not well aſcertained. Thoſe moſt certainly applicable and uſeful are aceſcent aliments, acids of all kinds, and neutral ſalts.

The progreſs of putrefaction may be conſiderably retarded, and its effects obviated, by ſupporting the tone of the veſſels; and this may be done by tonic medicines, of which the chief are cold, and the Peruvian bark, as already mentioned. The violence of reaction increaſing the tendency to putrefaction, may be moderated by the means already mentioned under *ſynocha*.

Theſe are the proper indications to be obſerved in the cure of the ſlow nervous fever. Some of the beſt writers have obſerved, that evacuations (eſpecially bleeding) are improper even at the beginning. Even a common purgative given at this time hath been followed by ſurpriſing languors, ſyncope, and a train of other ill ſymptoms. However, it is generally neceſſary to cleanſe the ſtomach and primæ viæ by a gentle emetic, a mild laxative, or a doſe of calomel. The following ſuitable formula we find in the pharmacopœia of St. Thomas's hoſpital under the name of *Hauſtus ſolutivus*.

(No. 31.) ℞ Salis cathart. amar. ʒvj.
Aquæ fontis ℥iij.
Tinct. Sennæ ʒvj. fiat Hauſtus.

Half of this will usually prove sufficient, but if not, the rest may be taken in the course of an hour. Sometimes it may be proper to evacuate the stomach and bowels at the same time; but this should never be attempted except in the first attack of fever. For this purpose:

(No. 32.) ℞ Calomelanos gr. iij.
Pulv. Antimonial. gr. v.
Cons. Cynosbat. q. s.
Misce fiat Bolus.

Indeed, where nausea, sickness, and load at the stomach, are urgent, as is frequently the case in the beginning of this fever, a vomit is necessary; (Vide Formula, No. 1.); and after it Dr. Fordyce recommends the following to be given when the patient is warm in bed:

(No. 33.) ℞ Aq. Menth. vulg. vel Cinnam. Ten. vel Alexit. simpl. ℥iss.
Tinct Opii, gtt. x. ad xxv. vel
Syr. Diacod. ℥jß. ad ʒvi.
Aq. Menth. Spir. vel
Nuc. Mosch. vel
Cinnam. Spir. ʒij.
Syr. Moror. ʒij. Misce.

Clysters of milk, sugar, and salt; or the following directed by Dr. Fordyce:

(No. 34.) ℞ Decoc. commun. pro Clysm. ℥viij. ad ℥xiv.
Elect. Sennæ ʒvj. ad ℥jß. vel Sal. Glaub. ver. ℥ß. ad ℥j.
Ol. Lini ℥jß. M. Ft. Enem. pro re nata vesp. injic.

may be injected with safety and advantage every second or third day, if nature wants to be prompted to stool. The temperate, cordial, diaphoretic medicines, are certainly, according to this author, most proper in these fevers. Dr. Fordyce directs the following:

(No. 35.) ℞ Aq. Menth. vulg. ℥jß.
Alk. Vol. Fix. Succ. Limon, satur. ℈j.
Pulv. Contrayer. comp. gr. xv. ad ʒß.
Syr. Croci
Aq. Menth. Piper. } aa ʒiß.
M. Ft. Haust. Capt. quartâ quâque horâ.

If the head should be much affected towards the beginning, a blister applied to it, or the back, often diminishes the whole fever, and relieves this symptom.

A well-regulated, supporting, diluting diet is necessary, and will of itself, if judiciously managed, go a great way in the cure, especially assisted by a due care to keep the patient as quiet as possible both in body and mind.—But it should be noted, that any

ſtrong opiates are commonly very pernicious, however much the want of ſleep and reſtleſſneſs may ſeem to demand them. Mild diaphoretics, ſuch as neutral draughts or elixir paregoricum, have much better effects. Theſe by raiſing a gentle eaſy ſweat, or at leaſt a plentiful perſpiration, calm the hurry of the ſpirits, and a refreſhing ſleep enſues. Where the confuſion and dejection of ſpirits are very conſiderable, bliſters have been adviſed to be applied to the neck, occiput, or behind the ears, and during all this a free uſe of thin wine-whey, ſome pleaſant ptiſan or gruel, with a little ſoft wine, muſt be indulged in. Indeed the patients, in this caſe, ſhould drink frequently: though ſuch quantities may not be neceſſary as in the ardent, or even putrid malignant fevers, yet they ſhould be ſufficient to carry on the work of dilution, ſupport the ſweats, and ſupply the blood with freſh and wholeſome fluids, in place of that noxious matter which is continually paſſing off. In this view alſo a thin chicken-broth is of ſervice, both as food and phyſic, eſpecially towards the decline of the diſeaſe; and for the ſame reaſon thin jellies of hartſhorn, ſago, panada, are uſeful, adding a little wine to them, and the juice of Seville orange and lemon.

Dr. Fordyce adviſes that if by any of theſe means the fever is carried off, it ſhould be prevented from recurring by

(No. 36.) ℞ Pulv. Cort. Peruv. ʒß. ad ʒj. Ft. Pulvis.
Vel, Cum Syr. Croc. q. ſ. Ft. Bolus.
Vel, (No. 37) ℞ Aq. Alexit. ʒiſs
Pulv. Cort. Peruv. ʒß. ad ʒj.
Syr. e Cort. aur. } aa ʒij.
Aq. Cort. aur. Spir. }
Ft. Hauſt. Omne horâ ſumendus.

It is obſervable, that the ſick are never ſo eaſy as when they are in a gentle ſweat; for this ſoon removes the hurry of ſpirits, exacerbations of heat, &c. But profuſe ſweats ſhould never be encouraged, much leſs attempted, by very ſtrong heating medicines, eſpecially in the beginning or advance of the fever; for they too much exhauſt the vital powers, and are followed by a vaſt dejection of ſpirits, tremors, ſtartings of the tendons, and ſometimes end in rigors, cold clammy ſweats, ſyncope, or a comatoſe diſpoſition. Sometimes irregular partial heats and fluſhes ſucceed, with great anxiety, reſtleſſneſs, delirium, difficulty of breathing, and a vaſt load and oppreſſion in the præcordia, ſo as to incline the leſs cautious obſerver to think there may be ſomething peripneumonic in it; but even here we muſt beware of bleeding, as the pulſe will be found very ſmall and unequal, though very quick. Nor is bleeding contra-indicated only by the weakneſs and fluttering of the pulſe, but alſo by the pale, limpid, and watery urine which is commonly attendant. Theſe ſymptoms denote the load, anxiety, and oppreſſion on the præcordia to

proceed from an affection of the nervous ſyſtem, and not from a peripneumonic obſtruction or inflammation. The breathing in this caſe, though thick and laborious, is not hot, but a kind of ſighing or ſobbing reſpiration, nor is there often any kind of cough concomitant; ſo that it has been conjectured to proceed from ſome ſpaſm on the vitals. Here therefore the nervous cordial medicines are indicated, and bliſters to the thighs, legs, or arms. Dr. Huxham commonly uſed the following bolus and ſaline draught.

(No. 38.) ℞ Pulv. contrayerv. comp. gr. xv.
Confect. Raleigh. ℈j.
Syr. Croci q. ſ. M. f. Bolus.

(No. 39.) ℞ Ammoniæ præp. ℈ſs.
Succ. limon. ℥iij.
Aq. Menthæ ſimpl. ℥iſs. M. *Peracta effervescentia, adde Sp. lavend. c. Syr. croc.* ana ℥iſs. *M. f.* Hauſt.

If great tremors and *ſubſultus tendinum* came on, he ſubſtituted half a ſcruple of muſk inſtead of the contrayerva in the bolus, with advantage.—One or other of theſe, or ſimilar preſcriptions, are to be taken every fifth, ſixth, or eighth hour, and a temperate cordial drink may be now and then made out of thin wine or cyder whey, or, which is in many caſes better, out of muſtard-whey; which laſt is by no means a contemptible medicine. The ſaline draught made as above is much more apt to paſs through the pores of the ſkin than when made with ſalt of tartar, which rather moves through the urinary paſſages.

The above-mentioned difficulty of breathing, anxiety, and oppreſſion, many times precede a miliary eruption, which often appears on the ſeventh, ninth, or eleventh day of the fever, and ſometimes later. Indeed great anxiety and oppreſſion on the præcordia always precede puſtular eruptions of any kind in all ſorts of fevers. This eruption ſhould be promoted by ſoft eaſy cordials and proper diluents; to which ſhould be ſometimes added ſome gentle aromatics. Theſe tend to calm the univerſal uneaſineſs commonly complained of, and alſo very effectually promote a diaphoreſis, or kindly breathing ſweats, with which the miliary eruptions freely and eaſily advance. But however advantageous theſe commonly are, profuſe ſweats are ſeldom or never ſo, even though attended with a very large eruption. Two or three crops of theſe miliary puſtules have been known to ſucceed one another, following profuſe ſweats, not only without advantage, but with great detriment to the patients, as they were thereby reduced to an extreme degree of weakneſs; ſo that they may juſtly be reckoned ſymptomatic rather than any thing elſe, and the conſequent eruption is often merely the ſymptom of a ſymptom; for the miliary glands of the ſkin appear very turgid, and exhibit a raſh, after profuſe ſweating, even in the moſt healthy.

In these profuse colliquative sweatings a little generous red wine (diluted somewhat, if necessary) may be given with the greatest advantage; as it presently moderates the sweats, supports the patient, and keeps up the miliary pabulæ if they happen to attend. Towards the decline of the fever also, where the sweats are abundant and weakening, small doses of the tincture of the bark with saffron and snake-root were given with the greatest advantage, frequently interposing a dose of rhubarb to carry off the putrid colluvies in the first passages; which usually makes the remissions or intermissions that often happen in the decline of nervous diseases more distinct and manifest, and gives a fairer opportunity of throwing in the bark; for in the proper exhibition of this medicine we are to place our chief hope of curing both the nervous and putrid malignant fevers.

II. Typhus gravior, or the *putrid, pestilential*, or *malignant* Fever. Sp. I. var. 2.

Febris pestilens, *P. Sal. Diverf.* de febre pestilenti.

Febris pestilens Ægyptiorum, *Alpin.* de med. Ægypt. l. i. cap. 14.

Typhus Ægyptiacus, *Sauv.* sp. 6.

Febris pestilens maligna, *Sennert.* de febribus, l. iv. cap. 10.

Febris maligna pestilens, *River.* l. xvii. sect. iii. cap. i.

Febris pestilens maligna, ann. 1643. *Willis*, de febribus, cap. 15.

Typhus carcerum, *Sauv.* sp. 1.

Febris nautica pestilentialis, *Huxham* de aëre ad ann. 1740.

Miliaris nautica, *Sauv.* sp. g.

Febris putrida contagiosa in carceribus genita, *Huxham* de aëre ad ann. 1742.

Miliaris purpurata, *Sauv.* sp. h.

Febris carcerum et nosocomiorum. *Pringle*, Diseases of the army, p. 294. *Van Swieten*, Maladies des armés, p. 136.

Typhus castrensis, *Sauv.* sp. 5.

Febris castrensis, quam vulgo cephalalgiam epidemicam vocant, *Henr. Maii* et *A. Ph. Koph.* Diss. apud *Hallerum*, tom. v.

Febris Hungarica sive castrensis, *Juncker*, 47. et *plurium auctorum.*

Febris castrensis Gallorum in Bohemia, ann. 1742. *Scrinci.* Diss. apud *Haller*, tom. v.

Febris petechialis, *Sennert.* l. iv. cap. 13. *River.* prax. l. xvii. sect. iii. cap. 1. *Hoffm.* II. p. 84. *Juncker.* 73. *Huxham* on fevers, chap. 8. *Ludwig.* Inst. med. clin. n° 146. *Schreiber* von erkentness, und cur der Krank heiten. p. 126. *Monro*, Diseases of military hospitals, p. 1.

Febris catarrhalis maligna petechizans, *Juncker*, 72. *Hoffm.* II. 75. *Eller* de cogn. et cur. morb. sect. vi.

Febris quæ lenticulas, punctícula, aut peticulas vocant, *Fracaſtorius* de morb. contag. lib. ii. cap. 6.

Febris peticularis Tridenti, ann. 1591. *Roboretus* de febr. peticul.

Febris petechialis epidemica Coloniæ ann. 1672. *Donckers*, Idia febris petechialis.

Febris petechialis epidemica Poſonii, 1683, *C. F. Loeu* in App. ad A. N. C. vol. ii.

Febris petechialis epidemica Mutinæ, 1692. *Ramazzini.* Conſt. Mutinenſis, oper. p. 177.

Febris maligna petechizans, ann. 1698. *Hoffm.* II. p. 80.

Febris petechialis Wratiſlaviæ ann. 1699. *Helwich*, Ephem. Germ. D. II. A. VII. et VIII. obſ. 132. p. 616.

Febris epidemia Lipſiæ 1718. *M. Adolph.* A. N. C. III. obſ. 131. p. 296.

Febris endemica et epidemica Corcagienſis ann. 1708, 1718, et ſeq. *Rogers*, Eſſays on epidemic diſeaſes.

Febris continua epidemica Corcagienſis ann. 1719, et ſeq. *M. O'Connel* Obſ. de morbis.

Febris petechialis epidemica Cremonæ 1734. *Valcharengki* Med. ration. ſect. 3.

Febris petechivans Petropoli 1735. *Weithrecht.* Diſſ. apud Haller. tom. v.

Febris petechialis, ann. 1740, 1741, in Heſſia, *Ritter.* A. N. C. vol. vii. obſ. 4.

Febris maligna petechialis Rintelli 1741. *Furſtenau.* A. N. C. vol. vii. obſ. 5.

Febris petechialis epidemica Sileſiæ 1741, et. ſeq. *Bandhorſt.* Diſſ. apud *Haller.* tom. v.

Febris petechialis epidemica Viennæ 1757. *Haſenohrl.* Hiſt. med. cap. 2.

Febris petechialis epidemica Lipſiæ 1757. *Ludovig.* Adverſar. tom. i. pars 1.

Febris petechialis epidemica variis Germaniæ locis ab ann. 1755 ad 1761. *Strack* de morbo cum petechiis.

Deſcription.] This diſeaſe has been ſuppoſed to differ from the former in degree only; and there are many circumſtances which would lead us to conclude, that both frequently originate from a contagion preciſely of the ſame nature. In the ſame manner we ſee, during different ſeaſons, and in different circumſtances, various degrees of malignity in ſmall-pox. Though every inſtance of the diſeaſe depends on the introduction of a peculiar and ſpecific contagion into the body, yet this contagion in particular epidemics evidently poſſeſſes peculiar malignancy. The ſame is probably the caſe with the typhoid fever: but whether this obſervation be

well founded or not, there cannot be a doubt that the typhus gravior or putrid fever is a diſeaſe of the moſt dangerous nature, as, beſides the extreme debility of the nervous ſyſtem, there is a rapid tendency of the fluids to putrefaction, which ſometimes cuts off the patient in a few days, nay, in the warm climates, in twelve or fourteen hours; or if the patient recovers, he is for a long time, even in this country, in an exceedingly weak ſtate, and requires many weeks to recover his former health.

The putrid fevers, according to Huxham, make their attack with much more violence than the ſlow nervous ones; the rigors are ſometimes very great, though ſometimes ſcarce felt; the heats ſharper and more permanent; yet, at firſt, ſudden, tranſient, and remittent: the pulſe more tenſe and hard, but commonly quick and ſmall; though ſometimes ſlow, and ſeemingly regular for a time, and then fluttering and unequal. The head-ach, nauſea, and vomiting, are much more conſiderable, even from the beginning. Sometimes a ſevere fixed pain is felt in one or both temples, or over one or both eye-brows; frequently in the bottom of the orbits of the eyes. The eyes always appear very dull, heavy, yellowiſh, and very often a little inflamed. The countenance ſeems bloated, and more dead-coloured than uſual. Commonly the temporal arteries throb much, and a tinnitus aurium is very troubleſome: a ſtrong vibration alſo of the carotid arteries frequently takes place in the advance of the fever, though the pulſe at the wriſt may be ſmall, nay even ſlow; this is a certain ſign of an impending delirium, and generally proceeds from ſome conſiderable obſtructions in the brain.

The proſtration of ſtrength, weakneſs, and faintneſs, are often ſurpriſingly great and ſudden, though no inordinate evacuation happens; and this too ſometimes when the pulſe ſeems tolerably ſtrong. The reſpiration is moſt commonly laborious, and interrupted with a kind of ſighing or ſobbing, and the breath is hot and offenſive.

Few or none of theſe fevers are without a ſort of lumbago, or pain in the back and loins; always an univerſal wearineſs or ſoreneſs is felt, and often much pain in the limbs. Sometimes a great heat, load, and pain, affect the pit of the ſtomach, with perpetual vomiting of porraceous or black fluid, and a moſt troubleſome ſingultus; the matter diſcharged is frequently of a very nauſeous ſmell. The tongue, though only white at the beginning, grows daily more dark and dry; ſometimes of a ſhining livid colour, with a kind of dark bubble at top; ſometimes exceeding black; and ſo continues for many days together; nor is the tinct to be got off in ſome for ſeveral days, even after a favourable criſis: at the height of the diſeaſe, it generally becomes very dry, ſtiff, and black, or of a dark pomegranate colour. Hence the ſpeech is very inarticulate, and ſcarce intelligible. The thirſt in

the increaſe of the fever is commonly very great, ſometimes unquenchable; and yet no kind of drink pleaſes, but all ſeem bitter, and mawkiſh; at other times, however, no thirſt is complained of, though the mouth and tongue are exceedingly foul and dry; this is always a dangerous ſymptom, and ends in a frenzy or coma. The lips and teeth, eſpecially near the height, are furred up with a very black tenacious ſordes. At the onſet of the fever, the urine is often crude, pale, and vapid, but grows much higher-coloured in the advance, and frequently reſembles a ſtrong lixivium, or citrine urine, tinged with a ſmall quantity of blood; it is without the leaſt ſediment or cloud, and ſo continues for many days together: by degrees it grows darker, like dead ſtrong high-coloured beer, and ſmells very rank and offenſive. In petechial fevers, the urine hath often been ſeen almoſt black and very *fetid*. The ſtools, eſpecially near the height, or in the decline of the fever, are for the moſt part intolerably fetid, green, livid, or black, frequently with ſevere gripes and blood. When they are more yellow or brown, the leſs the danger; but the higheſt when then they run off inſenſibly, whatever their colour may be. It is likewiſe a very bad ſymptom when the belly continues tenſe, ſwollen, and hard, after profuſe ſtools; for this is generally the conſequence of an inflammation or mortification of the inteſtines. A gentle diarrhœa is often very beneficial, and ſometimes ſeems to be the only way which nature takes to carry off the diſeaſe.

Sometimes black, livid, dun, or greeniſh ſpots appear, which always indicate a high degree of malignity; however, the more florid the ſpots are, the leſs danger is to be feared. It is alſo a good ſign when the black or violent petechiæ become of a brighter colour. The large, black, or livid ſpots, are almoſt always attended with profuſe hæmorrhagies; and the ſmall duſky, brown ſpots, like freckles, are not much leſs dangerous than the livid or black; though they are ſeldom accompanied with fluxes of blood: exceſſively profuſe, cold, clammy ſweats are often concomitant, by which alſo they ſometimes vaniſh, though without any advantage to the patient. The eruption of the petechiæ is uncertain; ſometimes they appear on the fourth or fifth day, though ſometimes not till the eleventh, or even later. The *vibices*, or large dark, blue, or greeniſh marks, ſeldom appear till very near the fatal period. Frequently alſo we meet with an efflorescence like the meaſles in malignant fevers, but of a much more dull and livid hue; in which the ſkin, eſpecially on the breaſt, appears as it were marbled or variegated. This in general is an ill ſymptom, and is often attended with fatal conſequences.

Sometimes about the eleventh or fourteenth day, on the occurrence of profuſe ſweats, the petechiæ diſappear, and vaſt quantites of white miliary puſtules break out. This is ſeldom found of

any conſiderable advantage; but an itching, ſmarting, red raſh, commonly gives great relief; and ſo do the large, fretting, watery bladders, which many times riſe upon the back, breaſt, ſhoulders, &c. A ſcabby eruption likewiſe about the lips and noſe is certainly one of the ſalutary ſymptoms; and the more hot and angry it is, ſo much the better. But of much more uncertain and dangerous event are the brown-coloured aphthæ; nor are thoſe that are exceeding white and thick, like lard, of a very promiſing aſpect. They are ſoon ſucceeded by great difficulty of ſwallowing, pain and ulceration of the fauces, œſophagus, &c. and with an inceſſant ſingultus: the whole *primæ viæ* become at laſt affected; a bloody dyſentery comes on, followed by a ſphacelation of the inteſtines; as is evident from the black, ſanious, and bloody ſtools, extremely fetid and infectious. Vibices, or large, black, and bluiſh marks reſembling bruiſes, are frequently ſeen towards the cloſe of the fever; and, when attended with lividity and coldneſs of the extremities, are certain tokens of approaching death. In ſome caſes, the blackneſs hath been known to reach almoſt to the elbows, and the hands have been dead-cold for a day or two before the death of the patient.

Such are the general appearances of the putrid malignant fever in this country, among thoſe who enjoy a free air, and are not crowded together, or expoſed to the cauſes of infection: but in gaols, hoſpitals, or other places where the ſick are crowded, and in ſome meaſure deprived of the benefit of the free air, the ſymptoms are, if poſſible, more terrible. Sir John Pringle, who had many opportunities of obſerving it, tells us, that the gaol or hoſpital fever, in the beginning, is not eaſy to be diſtinguiſhed from a common fever. The firſt ſymptoms are ſlight interchanges of heat and cold, a trembling of the hands, ſometimes a ſenſe of numbneſs in the arms, weakneſs of the limbs, loſs of appetite; and the diſorder increaſing towards night, the body grows hot, the ſleep is interrupted, and not refreſhing. With theſe ſymptoms, for the moſt part, there is ſome pain or confuſion in the head; the pulſe at firſt is a little quicker than natural, and the patients find themſelves too much indiſpoſed to go about buſineſs, though too well to be wholly confined. When the fever advances, the above-mentioned ſymptoms are in degree; and in particular the patient complains of a laſſitude, nauſea, pains in his back, a more conſtant pain and confuſion in his head, attended with an uncommon dejection of ſpirits. At this time the pulſe is never ſunk, but beats quick, and often varies in the ſame day both as to ſtrength and fulneſs. It is little affected by bleeding once, if a moderate quantity of blood be taken away; but if the evacuation be large, and eſpecially if it be repeated, to anſwer a falſe indication of inflammation, the pulſe, increaſing in frequency, is apt to ſink in force, and often irrecoverably, whilſt the patient becomes delirious. But withal we

muſt obſerve, that, in every caſe, independent of evacuations, the pulſe ſooner or later ſinks, and then gives certain intelligence of the nature of the diſeaſe. The appearance of the blood is various; for though it be commonly little altered, yet ſometimes it will be ſizy, not only on the firſt attack, but after the fever is formed: The worſt appearance is when the craſſamentum is diſſolved; though this does not happen till the advanced ſtate of the fever: though indeed this ſeems not ſo eaſy to be aſcertained, as blood has been ſo ſeldom taken away at that time. The urine is alſo various. Sometimes it is of a reddiſh or flame colour, which it preſerves a long time; but it is oftener pale, and changes from time to time in colour as well as crudity, being ſometimes clear, ſometimes clouded: towards the end, upon a favourable criſis, it becomes thick, but does not always depoſit a ſediment. If the ſick lie warm, and have had no preceding flux, the belly is generally bound; but when they lie cold, as they often do in field hoſpitals, the pores of the ſkin being ſhut, a diarrhœa is a common ſymptom, but is not critical. In the worſt caſes, a flux appears in the laſt ſtage; then the ſtools are involuntary, colliquative, ichorous, or bloody, and have a cadaverous ſmell; the effects of a mortification of the bowels, and the ſigns of approaching death. When the hoſpitals are filled with dyſenteric patients, ſome of the nurſes will be infected with the flux only, and others with this fever, ending in theſe bloody and gangrenous ſtools.

In the beginning the heat is moderate; and even in the advanced ſtate, on firſt touching the ſkin, it ſeems inconſiderable; but upon feeling the pulſe for ſome time, we are ſenſible of an uncommon ardour (the *calor mordicans*, as it has been called), leaving an unpleaſant ſenſation on the fingers for a few minutes after. A day or two before death, if care be not taken, the extremities become cold, and the pulſe is then hardly to be felt. The ſkin is generally dry and parched; though ſometimes there are longer or ſhorter ſweats, eſpecially in the beginning. Such as are produced by medicine are of no uſe, except on the firſt attack, at which time they will often remove the fever; and natural ſweats are never critical till the diſeaſe begins to decline. Theſe laſt are rarely profuſe, but gentle, continued, and equally diffuſed over the body. Sometimes the diſeaſe will terminate by an almoſt imperceptible moiſture of the ſkin; the ſweats are uſually fetid, and offenſive even to the patient himſelf.

The tongue is commonly dry; and, without conſtant care of the nurſe, becomes hard and brown, with deep chaps: but this ſymptom is common to moſt fevers. At other times, though rarely, the tongue is ſoft and moiſt to the laſt, but with a mixture of a greeniſh or yellowiſh colour. The thirſt is ſometimes great, but more frequently moderate. In the advanced ſtate, the breath

is offenſive, and a blackiſh furring gathers about the roots of the teeth.

Some are never delirious, but all lie under a ſtupor or confuſion; few retain their ſenſes till death: many loſe them early, and from two cauſes; either from immoderate bleeding, or the premature uſe of warm and ſpirituous medicines. They rarely ſleep; and, unleſs delirious, have more of a dejected and thoughtful look than what is commonly ſeen in other fevers. The face is late in acquiring either a ghaſtly or a very morbid appearance; yet the eyes are always muddy, and generally the white is of a reddiſh caſt as if inflamed. The confuſion of the head generally riſes to a delirium, eſpecially at night; but, unleſs by an unſeaſonable hot regimen, it ſeldom turns to rage, or to thoſe high flights of imagination common in other fevers. When the delirium comes to that height, the face is fluſhed, the eyes red, the voice is quick, and the patient ſtruggles to get up. But when that ſymptom is owing to large evacuations, or only to the advanced ſtate of the diſeaſe, the face appears meagre; the eyelids in ſlumbers are only half ſhut; and the voice, which is commonly low and ſlow, ſinks to a degree ſcarce to be heard. From the beginning there is generally a great dejection and failure of ſtrength. A tremor of the hands is more common than a ſtarting of the tendons; or if the ſubſultus occurs, it is in a leſſer degree than in many other fevers. In every ſtage of the diſeaſe, as the pulſe ſinks, the delirium and tremor increaſe; and in proportion as the pulſe riſes, the head and ſpirits are relieved. Sometimes in the beginning, but for the moſt part in the advanced ſtate, the patient grows dull of hearing, and at laſt almoſt deaf. When the fever is protracted, with a ſlow and low voice, the ſick have a particular craving for ſomething cordial, and nothing is ſo cordial or ſo acceptable as wine. They long for no food, yet willingly take a little panada if wine be added. But ſuch as are delirious, with a quick voice, wild looks, a ſubſultus tendinum, or violent actions, though their pulſe be ſunk, yet bear neither hot medicines, wine, nor the common cordials.

Vomiting, and complaints of a load and ſickneſs at ſtomach, though uſual ſymptoms, are not eſſential to the diſeaſe; nor are pleuritic ſtitches, difficulty in breathing, or flying pains, to be referred ſo much to it as to the conſtitution of the patient, or to a preceding cold.

A petechial efflorescence is a frequent, though not an inſeparable, attendant of this fever. It ſometimes appears of a brighter or paler red, at other times of a livid colour, but never riſes above the ſkin. The ſpots are ſmall; but generally ſo confluent, that at a little diſtance the ſkin appears only ſomewhat redder than ordinary, as if the colour was uniform; but upon a nearer in-

ſpection there are interſtices ſeen. For the moſt part this eruption is ſo little conſpicuous, that, unleſs it be looked for attentively, it may eſcape notice. The ſpots appear thickeſt on the back and breaſt, leſs on the legs and arms, and Sir John Pringle never remembers to have ſeen any on the face. As to the time of their appearance, he agrees entirely with Dr. Huxham. Theſe ſpots are never critical, nor are they reckoned among the mortal ſymptoms; but only concur with other ſigns to aſcertain the nature of the diſeaſe. The nearer they approach to purple, the more they are to be dreaded. In a few caſes, inſtead of ſpots, purple ſtreaks and blotches were obſerved. Sometimes the petechiæ did not appear till after death; and there was one caſe in which, after bleeding, the petechiæ were ſeen only on the arm below the ligature, and no-where elſe on the ſkin.

The hoſpital fever, though accounted one of the continued kind, yet has generally ſome exacerbation at night, with a remiſſion and often partial ſweats in the day; and after a long continuance it is apt to change into a hectic, or an intermitting form. The length of the diſeaſe is uncertain. Sometimes it terminated either in death or recovery, in ſeven days after the patient took to his bed; but in the hoſpitals it generally continued from fourteen to twenty, and ſome died or recovered after four weeks. From the time of the ſinking of the pulſe until death or a favourable criſis, there is, perhaps, leſs change to be ſeen from day to day in this than in moſt other fevers. When its courſe is long, it ſometimes terminates in ſuppurations of the parotid or axillary glands; and when theſe do not appear, it is probable that the fever is kept up by the formation of ſome internal abſceſs. The parotid glands themſelves do not ſuppurate, but only ſome of the lymphatic glands. Sir John Pringle obſerved one inſtance of a ſwelling of this kind on both ſides, without any previous indiſpoſition, when the perſon, not ſuſpecting the cauſe, and applying diſcutient cataplaſms, was, upon the tumor ſubſiding, ſeized with the hoſpital-fever. Many patients after the criſis of this fever complain of a pain of the limbs and want of reſt; and almoſt all of them mention great weakneſs, confuſion in their head, vertigo, and a noiſe in their ears.

Ten of the bodies of thoſe who died of this diſeaſe in Houghton's regiment were opened. In ſome all the cavities were examined; in others, only the brain or the bowels. In ſome of them, the brain appeared to be ſuppurated. The firſt of this kind Sir John Pringle met with at Ghent; but the man being brought into the hoſpital from the barracks no earlier than two days before he died, he could only conjecture from the ſymptoms and the imperfect accounts he had of him, that his death was owing to a fever of this kind after lingering near a month in it. About three ounces of purulent matter were found in the ventricles or

the brain, and the whole cortical and medullary ſubſtance was uncommonly flaccid and tender; nay, ſome of the ſame kind of matter was found in the ſubſtance of the upper part of the cerebellum: yet this perſon, with ſome ſtupor and deafneſs, had his ſenſes till the night before he died; ſo far, at leaſt, that he anſwered diſtinctly when rouſed and ſpoken to; but about that time the muſcles of his face began to be convulſed. Of two other inſtances of men who undoubtedly died of this fever, in one the cerebrum was ſuppurated, in the other the cerebellum. In the former caſe, the patient was under a ſtupor, with deafneſs from the beginning; but was never delirious nor altogether inſenſible. His pulſe ſunk early; and about ten days before his death his head began to ſwell, and continued very large till within two days before he died, when it ſubſided a little. For ſeveral days before his end, he would taſte nothing but cold water, and during his illneſs he lay conſtantly upon one ſide. The head being opened, an abſceſs as large as an egg was found in the ſubſtance of the fore-part of the right hemiſphere of the brain, full of thin matter like whey. At that time five more, ill of the ſame fever, had the like ſwelling of their heads, but recovered. In the other caſe, the abſceſs in the cerebellum was about the ſize of a ſmall pigeon's egg, and contained alſo a thin ichorous matter; nor had this patient ever been ſo thoroughly inſenſible as not to anſwer reaſonably when ſpoken to. Two days before he died his urine turned pale.

Theſe ſuppurations, however, were not conſtant; for another who died about the ſame time, and had been ill about the ſame number of days with the like ſymptoms, the pale water excepted, had no abſceſs either in the brain or cerebellum. And two were opened afterwards, in whom the cortical ſubſtance of the brain had an inflammatory appearance, but no ſuppuration. In one of them the large inteſtines were corrupted: that man went off with a looſeneſs; and juſt before he died, an ichorous matter was diſcharged from his noſe. In the military hoſpital at Ipſwich, one who unexpectedly died of this fever after having been ſeemingly in a fair way of recovery, had no ſuppuration in his brain; but another, who died after, had an abſceſs in each orbit, the brain was found flaccid, and there was about two ounces of a thin ſerum in the ventricles.

2. *Cauſes of, and perſons ſubject to, this diſorder.*] The cauſe of this fever, as well as that of the ſlow nervous fever, is an infection or contagion from ſome diſeaſed animal body, or from corrupted vegetables; and therefore is very little, if at all, different from thoſe peſtilential diſorders which have ariſen after battles, when great numbers of dead bodies were allowed to lie above ground, and infect the air with their effluvia. This is confirmed by an obſervation of Foreſtus, who was eye-witneſs to a diſtemper of this kind (which indeed he calls a *plague*) owing to the ſame cauſe, attended

with buboes and a high degree of contagion. The ſame author alſo gives an account of a maliguant fever breaking out at Egmont in North-Holland, occaſioned by the rotting of a whale which had been left on the ſhore. We have a like obſervation of a fever affecting the crew of a French ſhip, by the putrefaction of ſome cattle which they had killed on the iſland of Nevis in the Weſt Indies. Theſe men were ſeized with a pain in the head and loins, great weakneſs and a diſorder of the ſtomach, accompanied with fever. Some had carbuncles; and on others purple ſpots appeared after death.

Galen aſſigns two cauſes for peſtilential fevers: 1. The great heat of the weather, when the humours happen to be in a more putreſcent ſtate than uſual. 2. A putrid ſtate of the air, ariſing either from a multitude of dead bodies left unburied, as after a battle, or from the evaporation of corrupted lakes and marſhes.

One of the moſt remarkable diſeaſes incident to an army is related by Diodorus, as breaking out among the Carthaginians at the ſiege of Syracuſe. That author not only relates ſome of its moſt diſtinguiſhing ſymptoms, but reaſons well about its cauſe. He obſerves, that pains in the back and eruptions (φλυχταινα) were common; that ſome had bloody ſtools; that others were ſeized with a delirium, ſo as to run about and beat all that came in their way; that the phyſicians knew no cure; and that it was the more fatal as the ſick were abandoned by every body on account of the contagion. As to the cauſe, the author takes notice of the multitude of people confined within a narrow compaſs; of the ſituation of the camp in a low and wet ground; of the ſcorching heats in the middle of the day, ſucceeded by the cold and damp air from the marſhes in the night-time; to theſe he adds, the putrid ſteams ariſing firſt from the marſhes, and afterwards from the bodies of thoſe who lay unburied.—This diſtemper ſeems to have been a compound of the marſh and peſtilential fever.

Foreſtus remarks, that, from the putrefaction of the water only, the city of Delft, where he practiſed, was ſcarce ten years together free from the plague or ſome peſtilential diſtemper. He adds, that the magiſtrates, upon his repreſentation of the cauſe, erected a wind-mill for moving and refreſhing the water. At that time Holland was much more ſubject to inundations and the ſtagnation of water than at preſent. In 1694, a fever broke out at Rochfort in France, which, on account of the uncommon ſymptoms and great mortality, was at firſt believed to be the plague. But M. Chirac, who was ſent by the court to enquire into its nature, found the cauſe to ariſe from ſome marſhes that had been made by an inundation of the ſea; and obſerved, that the corrupted ſteams, which ſmelled like gunpowder, were carried to the town by the wind, which had long blown from that quarter. About two thirds of thoſe who were taken ill, died. In ſuch as were opened, the brain

was found either inflamed or loaded with blood; the fibres of the body were uncommonly tender; and the bowels had either suppurated or were mortified.

It is needless to mention more instances of pestilential fevers being brought on by the steams of corrupted substances, whether animal or vegetable. In general it may be remarked, that the putrefaction of these substances in a dry air is more apt to bring on a fever of the continued form; but in a moist air hath a great tendency to produce remitting fevers. But it must also be observed, that, even in cases where the most malignant fevers prevail, all persons are not equally disposed to receive the infection, though equally exposed to it with others. Some, through mere vigour of body and mind, cannot be infected with the most contagious diseases; while, on the other hand, those whose bodies are debilitated by a former disease, by study, low diet, or want, or those who have laboured under any of the depressing passions of the mind for some time, seldom or never escape. Men, therefore, who have been weakened by accidents (as those who have undergone a mercurial salivation) are very apt to fall into this disease. Those who are taken into crowded hospitals, ill of the small-pox, however good the sort may be, fall readily into this fever, and run a greater risk of dying of it than others. The second fever is attended with double danger, seeing the patient has been so much weakened by the first. A sure sign of the corruption of the air in an hospital is when many of the nurses fall sick.

3. *Prognosis.*] In these fevers we cannot draw a prognostic from any symptom by itself; and perhaps all of them together are more fallible than in others. Generally the following are good: To have little delirium; the strength little impaired; turbid urine in the decline of the disease; and at that time a gentle sweat or moisture diffused over the body, or even the skin soft and the tongue moist; or to have some loose stools succeeded by a diaphoresis; the pulse to rise by wine or cordials, with an abatement of the stupor, tremor, and other affections of the brain. Deafness is rather a good sign. A sediment in the urine, without other changes for the better, is no sure sign of recovery; and some have recovered in whose water there was no sediment.—The bad signs are, a subsultus tendinum; the eyes much inflamed and staring; the speech quick, and the sound of the voice altered; a high delirium; perpetual watchfulness; constant sickness at the stomach, and vomitings; frequent stools, and a sinking pulse, and the disorder of the head increased; coldness of the extremities, and a tremulous motion of the tongue. It is observed to be among the worst signs when the patient complains of blindness; when he swallows with difficulty, or cannot put out his tongue when desired to do it; when he can lie on his back only, and pulls up his knees; or when insensibly he endeavours to uncover his breast, or makes frequent attempts to get out of bed without assigning any reason. If to

any of these are added ichorous, cadaverous, and involuntary stools, it is a sign of a mortification of the bowels and approaching death. It will not seem strange to find most of these prognostics common to the advanced state of other fevers, when we consider, that from whatever cause fevers begin, by a long continuance the humours are corrupted, and the brain and nerves affected much in the same manner as in those which arise from infection.

4. *Prevention and cure.*] As diseases of the putrid kind never arise without an infection received from some quarter or other, the methods of prevention must evidently be reduced to two general heads. 1. To avoid receiving the infection into the body; and, 2. To put the body in such a situation as may enable it to resist the infection when received. On both these methods scarce any writer hath equalled Dr. Lind of Haslar, whose opinions and directions therefore we shall give pretty fully.

As putrid diseases are very common and violent in the hot countries, it is very necessary for Europeans who visit these climates to be well informed, in the first place, of the signs of an unhealthy country, that they may be upon their guard as soon as they enter any foreign region. These signs are by our author enumerated as follows:

1. A sudden and great alteration in the air, at sun-set, from intolerable heat to a chilling cold. This is perceived as soon as the sun is down, and is for the most part accompanied with a very heavy dew: it shows an unhealthy swampy soil, the nature of which is such, that no sooner the sun-beams are withdrawn, than the vapours emitted from it render the air damp, raw, and chilling, in the most sultry climates; so that even under the equator, in some unhealthy places, the night-air is very cold to an European constitution.

2. Thick noisome fogs, chiefly after sun-set, arising from the valleys, and particularly from the mud, slime, or other impurities. In hot countries, the smell of these fogs may be compared to that of a new-cleaned ditch. Diseases, therefore, arising from this cause, generally take place in the night, or before sun-rising.

3. Numerous swarms of flies, gnats, and other insects which attend stagnated air and unhealthy places covered with wood.

4. When all butchers' meat soon corrupts, and in a few hours becomes full of maggots; when metals are quickly corroded on being exposed to the air; and when a corpse becomes intolerably offensive in less than six hours; these are proofs of a close, hot, and unwholesome country. And in such places, during excessive heats and great calms, it is not altogether uncommon for Europeans, especially such as are of a gross habit of body, to be seized at once with the most alarming and fatal symptoms of what is called the *yellow fever*, without even any previous complaint of sickness or other symptoms of the disease. There has been first per-

ceived an uneasy itching sensation, commonly in the legs; and upon pulling down the stocking, streams of thin dissolved blood followed, a ghastly yellow colour quickly diffused itself over the whole body, and the patient has been carried off in less than forty-eight hours.

5. A sort of sandy soil, commonly a small, loose, white sand, as that at Pensacola, Whydah, and the island of Bonavista, which is found by experience to be injurious to health. The pestiferous vapour arising, during the summer months and in the heat of the day, from such a sandy soil, is best characterised by its effects in the extensive deserts of Asia, and Africa. It there constitutes what is called the *Samiel wind;* a blast which, in the parched desert, proves instantly fatal both to man and beast: but when it passes over a soil well covered with grass and vegetables, has its effects greatly mitigated; it is, however, even then, productive of sickness: thus the southerly winds, while they blow from the deserts of Libya during the summer, at Algiers, Tunis, and Tripoli, produce an unhealthy season; and at Madras the winds, which, in the months of April and May, pass over a large tract of sand, are always hot, disagreeable, and unwholesome.

During these land-winds, sudden gusts of a more hot and suffocating nature are often observed to come from these sands once or twice, or even more frequently, in a day, which seem to be this vapour in a purer form. These gusts pass very quickly, and affect persons who happen to stand with their faces towards them in the same manner as the hot air which issues from a burning furnace, or from a heated oven, and obliges them immediately to turn away from it in order to recover breath. The effect of this hot suffocating blast or vapour on the human body, even when mitigated by passing through a moist atmosphere, is the same as that of intense cold; it shuts up every pore of the skin, and entirely stops the perspiration of such as are exposed to it. These blasts come only in the day-time, and always from the deserts. Water is the only known corrector or antidote against them; hence, coarse thick cloths, kept constantly wet, and hung up at the windows or doors, greatly mitigate their violence. A house so built as to have no windows or doors towards the deserts, is an excellent protection against their pernicious effects. The hot land-winds constantly blow at Madras and other places on the coast of Coromandel, at that season, from midnight till noon: the sea-breezes then begin, which relieve the difficulty in breathing, and the obstructed perspiration which the former occasioned.

That the heat of these land-winds, as also of the sudden gusts which accompany them, proceed from large tracts of sand heated by the sun, is evident from the increased heat and suffocating quality of those winds, in proportion as the day advances, and as the heat of the season is increased. The opposite winds blowing from

each ſide of the Balagate mountains, are a farther proof of this. Theſe mountains, running from north to ſouth, divide the hither Peninſula of India into two unequal parts, and ſeparate what is called the *Malabar* from the *Coromandel* coaſt. To the former they are very near, but at a great diſtance from the latter. The winds blowing from thoſe hills are on the Malabar coaſt always remarkably cool; but on the coaſt of Coromandel, in the months of April, May, June, and July, are extremely hot and ſuffocating, as they paſs over a large tract of intermediate ſand, heated during thoſe months by an almoſt vertical ſun. Hence the Malabar coaſt is always covered with an agreeable verdure; whereas the Coromandel coaſt, during the continuance of theſe hot winds, ſeems a barren wilderneſs, nothing appearing green except the trees. On the contrary, the winds that paſs over theſe ſands, after being wet with the rains, are the coldeſt which blow at Madras. Bottles of liquor incloſed in bags of coarſe cloth, kept conſtantly wet and ſuſpended in the ſhade, where thoſe hot winds may have acceſs to them, become as cold as if they had been immerſed in a ſolution of nitre; an effect owing undoubtedly to the conſtant evaporation of water from the ſurface.

It is an obſervation of the natives on the coaſt of Coromandel, which is confirmed by the experience of many Europeans, that the longer the hot land-winds blow, the healthier are the enſuing months; theſe winds, as they expreſs it, purifying the air. Are not the winds, therefore, the cauſe why the air on the coaſt of Coromandel, except during their continuance, is more healthy than in other parts of India where theſe winds do not blow? Does not this alſo ſuggeſt a very probable reaſon, why the plague in Egypt generally ceaſes in the beginning of June; the periodical hot winds which come from the deſerts of Nubia and Ethiopia having then rendered the air of Egypt pure and wholeſome? Many have aſcribed that effect to the north winds; as the plague not only ceaſes when they blow, but all infected goods, houſehold furniture, and wearing apparel, are then ſaid to become entirely free from the contagion: theſe, however, cannot be the cauſe, as the moſt deſtructive plague is abated in its violence, if not wholly eradicated; before they ſet in. With equal propriety we may reject the opinion that the overflowing of the Nile is productive of that ſalutary effect, as the plague generally ceaſes before the increaſe of that river is perceptible.

Thus the plague, the greateſt calamity which can afflict mankind, ſeems to be deſtroyed by thoſe hot winds, which are otherwiſe ſo pernicious to animal and vegetable life. And although, during the continuance of theſe winds, the moſt fruitful fields wear the aſpect of a parched deſert, yet no ſooner do the rains fall, but vegetation is reſtored, the plants revive, and a beautiful verdure is again ſpread over the face of the country.

Having thus given an account of the ſigns of an unhealty country, Dr. Lind next proceeds to mention ſuch employments as are particularly dangerous to Europeans on their firſt arrival. One of theſe is the cutting down of trees, ſhrubs, &c. or *clearing the ground*, as it is called. Of the unhealthineſs of this employment he gives two inſtances. At the concluſion of the late peace, the captain of a ſhip of war went on ſhore at the iſland of Dominica, with twelve of his men, to cut down the wood, and to clear a piece of ground which he intended to have purchaſed, but in a few days, ſickneſs obliged him to deſiſt from this dangerous work; the captain and eleven of his men being ſeized with violent fevers, which terminated in obſtinate intermittents, and of which ſeveral died. The ſurvivors ſuffered ſo much in their conſtitutions, that, even after they came to England, the return of an eaſt-wind was apt to bring on a violent fit of the ague. The Ludlow-Caſtle, a ſhip of war of forty guns, in a voyage to the coaſt of Guinea, alſo loſt twenty-five of their men at Sierra Leona, who were employed in cutting down wood for the ſhip. This is an occupation which has often proved deſtructive to Europeans in thoſe climates, and in which they ought never to be employed, eſpecially during the rainy ſeaſon; there being numberleſs inſtances of white perſons, when cutting down the woods at that ſeaſon, who have been taken ill in the morning, and dead before night.

Another evil, leſs known, and leſs ſuſpected, but no leſs dangerous, is the ſending of Europeans in open boats after ſunſet, where the ſoil is ſwampy, or where there are great night-fogs. The ſingle duty alone of fetching freſh killed butchers' meat at night for the uſe of our ſhips' companies in the Eaſt and Weſt Indies, has deſtroyed every year ſeveral thouſand ſeamen. In thoſe parts of the world, butchers' meat muſt be brought on board at night immediately after it is killed, otherwiſe it will not be fit for uſe the next day; but a contract made with the natives to ſend it on board at that time, which might be done for a trifling ſum, would be the means of preſerving many uſeful lives. During the ſickly ſeaſon at Batavia, a boat belonging to the Medway, which attended on ſhore every night, was three times ſucceſſively manned, not one having ſurvived that ſervice. They were all taken ill in the night, when on ſhore, or when returning on board; ſo that at length the officers were obliged to employ none but the natives on that buſineſs. Great numbers of men have periſhed from being employed in this manner at Bengal, where the European ſhips often anchor in the moſt unhealthy ſpots of the river; and even when the great night-fogs ariſe, after the rainy ſeaſon, the men are often obliged to perform ſuch night-ſervices in boats. Now ſince it is ſo dangerous for Europeans in unhealthy countries, particularly during a ſeaſon of ſickneſs, to be expoſed in an open boat to the foggy night-air, it muſt appear, that ſending them unſheltered, in open

boats, far up rivers, in unhealthy ſouthern climates, for the ſake of wood, water, trade, or other purpoſes, muſt be attended with the moſt deſtructive and fatal conſequences.

Burying the dead in ſwampy countries is another occupation which has proved fatal to many, and which ought to be entruſted to negroes or the natives of the country. The effluvia from the ground when newly opened, whether from graves or ditches, are far more dangerous than from the ſame ſwampy ſoil when the ſurface is undiſturbed; nay, in ſome places it has been found almoſt certain death for an European to dig a grave, unleſs long ſeaſoned to the country. In ſuch a place, the attendance of friends at funerals ought to be diſpenſed with.

In all caſes where it is practicable, the ſhips which viſit theſe unhealthy countries ſhould anchor at as great a diſtance as poſſible from ſhore; or if obliged to anchor near marſhy grounds or ſwamps, eſpecially during ſummer or in hot weather, and when the winds blow directly from thence, the gun-ports which would admit the noxious land-breeze ought to be kept ſhut, eſpecially at night. Or if the ſhip rides with her head to the wind, a thick ſail ought to be put upon the foremaſt, along which the ſmoke from the fire-place might be made conſtantly to play and aſcend. If the ſail ſhould occaſion a little ſmoke between decks, this inconvenience will be ſufficiently compenſated by its keeping off the direct ſtream of the ſwampy ſhore effluvia; which now being obliged to form a curve before they reach the more diſtant parts of the veſſel, muſt needs be greatly diverted and ſcattered.

The beſt preſervative againſt the miſchievous impreſſions of a putrid fog, or of a marſhy exhalation, is a cloſe, ſheltered, and covered place; ſuch as the lower apartments in a ſhip, or a houſe in which there are no doors or windows facing the ſwamps. If in ſuch places a fire be kept either at the doors and other inlets to a houſe, or in the chambers, as is practiſed in ſome unhealthy countries during the rainy or foggy ſeaſon, it will prove an excellent and effectual protection againſt the injuries of a bad air. On board of ſhips alſo fires may be made at the hatchways; and of the good effects of this we have the following example. When the Edgar, a ſhip of war of 60 guns, was upon the coaſt of Guinea in the year 1768, her men were very ſickly, and many of them died: however it was obſerved, that in a ſloop of war, which was conſtantly in company with her, few were taken ill, and not one died during the whole voyage. This could be aſcribed to no other cauſe, but that in the ſloop the fire-place for cooking victuals was on the ſame level with the deck where the men lay; and every morning when the fire was lighted, eſpecially when there was but little wind, the ſmoke from the cook-room ſpread itſelf all over the ſhip, and particularly over thoſe parts where the men lay; but

from the conſtruction of the fire-place of the Edgar, no ſmoke from it ever came between her decks.

Perſons on board any ſhip whatever, are much more ſafe, and their ſituation is much preferable to that of thoſe who make diſtant inland excurſions in ſmall boats upon the rivers, and who are for the moſt part ignorant of the cauſe of thoſe maladies which deſtroy them. The intolerable heat at noon often obliges ſuch perſons to go in a manner half-naked; while a free and plentiful perſpiration iſſues from every pore. A near approach to putrid ſwamps at this time is apt to produce an immediate ſickneſs, vomiting, and afterwards a low nervous or malignant fever. But if they happen to paſs them at night, or lie near them in an open boat, the air from thoſe ſwamps is perceived to be quite chill and cold; inſomuch that warm thick clothing becomes abſolutely requiſite to guard the body againſt the impreſſions of ſo great an alteration in the air, and againſt its cold and inclement quality; for the effects of it then, even on the moſt healthy and vigorous conſtitution, is frequently a chilling cold fit of an ague, terminating in a fever with delirium, bilious vomitings, a flux, or even death itſelf.

But where ſuch expoſure becomes unavoidable, the only method is then to defend the body as much as poſſible againſt the pernicious miaſmata with which the air abounds. All thoſe who are employed in cutting down woods, or in other laborious and dangerous ſervices in hot climates, during the heat of the day, ought to have their heads covered with a bladder dipt in vinegar, and to waſh their mouths often with the ſame liquor; never to ſwallow their ſpittle, but rather to chew a little rhubarb or ſome other bitter, and ſpit it out frequently; to ſtop their noſtrils with a ſmall bit of linen or tow dipped in camphorated vinegar; and to infuſe ſome bark, garlic, and rhubarb, in brandy, of which a drachm is to be taken, either by itſelf or diluted with water, morning and evening.

In the evening before ſunſet they ſhould leave off work, and not return to their labour in the morning till the ſun has diſperſed the unwholeſome dews and vapours. Thoſe who muſt of neceſſity remain on ſhore, and ſleep in dangerous places, muſt take care not to ſleep upon the ground expoſed to the dews, but in hammocks in a cloſe tent, ſtanding upon a dry ſand, gravel, or chalk, near the ſea ſhore, and where there is no ſubterraneous water for at leaſt four feet below the ſurface of the ground. The door of his tent ſhould be made to open towards the ſea; and the back part of it, which receives the land-breeze, muſt be well ſecured by double canvas, or covered with branches of trees. But in ſuch circumſtances, a hut, when it can be procured, is preferable to a tent, eſpecially if it be well thatched, ſo as to prove a defence both againſt the exceſſive heat of the ſun by day, and the noxious dews which

fall at night. Here the men may be enjoined to ſmoke tobacco. When the air is thick, moiſt, and chill, the earth being overſpread with cold dew, a conſtant fire muſt be kept in and about the tent or hut, as the moſt excellent means of purifying ſuch unwholeſome air, and of preſerving the health of thoſe who, either ſleeping or waking, are expoſed to its influence. The centinels who guard the water-caſks, ought likewiſe at ſuch a time to have a fire burning near them. All old and forſaken habitations, natural caves and grottoes in the earth, where the men may be induced to take up their abode, muſt before their admiſſion be perfectly dried and purified with ſufficient fires. Fire and ſmoke are undoubtedly the great purifiers of all tainted and unwholeſome air, and the moſt excellent preſervatives againſt its noxious influence. It is the cuſtom of the negroes in Guinea, and alſo of ſome Indians (who both ſleep for the moſt part on the ground), to have a fire, producing a little ſmoke, conſtantly burning in their huts where they ſleep. This not only corrects the moiſture of the night, but alſo, by occaſioning more ſmoke than heat, renders the damp from the earth leſs noxious; of which Dr. Lind gives the following remarkable inſtance. A Guinea ſhip being up one of the rivers for the ſake of trade, it was found to be very dangerous to ſleep on ſhore; without which their trade could not be ſo conveniently carried on. Firſt the captain, then the mate, and two or three of the ſeamen, were taken ill, each of them the morning after they had lain on ſhore. By theſe accidents the men were greatly intimidated from lying on ſhore; till the ſurgeon boldly offered to try the experiment on himſelf. Next morning when he waked, he found himſelf ſeized, as the reſt, with a giddineſs and pain in the head, &c. He immediately acquainted one of the negroes with his condition, who carried him to his hut, and ſet him down in the ſmoke of it: when his ſhiverings and giddineſs ſoon left him. He then took a drachm of the bark bitter; and found himſelf greatly relieved, eſpecially by breathing ſome time in the ſmoke. Thus inſtructed by the negro, he ordered a large fire to dry the hut he ſlept in; and afterwards had every night a ſmall fire ſufficient to raiſe a gentle ſmoke, without occaſioning a troubleſome heat: and by this means he and ſeveral others, uſing the ſame precautions, ſlept many nights on ſhore without any inconvenience.

Fire and ſmoke indeed are found to be certain correctors, or rather deſtroyers, of infection in all caſes, whether ariſing from the noxious effluvia of marſhes, or from the contagion of diſeaſed bodies. Even thoſe moſt extraordinary and fatal damps called *harmattans*, are unable to reſiſt the ſalutary effects of ſmoke. In other caſes, Dr. Lind remarks, that, under ſome circumſtances, the ſource of an infection in a ſick chamber, or any other place, maybe removed or deſtroyed by accidental means, for which we

cannot account, and which we often cannot aſcertain. But it oftener happens, that it is very difficultly rooted out; and that exact cleanlineſs, with the benefit of a pure air, often prove inſufficient to remove the evil. Smoke, however, has never been known to fail. It is not to be doubted, that, excepting the true plague, there has been an infection fully as peſtilential and as mortal in ſome ſhips as in any other place whatever; yet it has never been heard, that any ſhip, after having been carefully ſmoked, did not immediately become healthy: and if afterwards they turned ſickly, it was eaſy to trace that ſickneſs from other infected ſhips, gaols, and the like places.

There are three methods practiſed for purifying veſſels after the men have been removed out of them. The firſt is by burning of tobacco. A quantity of tobacco is ſpread on ſeveral fires, made with ſuch old pieces of rope as are called *junk*. Theſe are diſperſed into different places of the ſhip, and their heat and ſmoke afterwards cloſely confined below for a conſiderable time. The ſecond method is by charcoal fires ſtrewed with brimſtone.—The heat and ſteam of theſe burning materials muſt alſo be long and cloſe ſhut up: but, although this fume, properly applied, has been found by experience to purify moſt effectually tainted apartments, ſhips, clothes, &c. yet there are ſome kinds of vermin which it will not deſtroy, particularly lice. The third method of purification is performed by the addition of arſenic to the materials of the ſecond proceſs, in the following manner.—After carefully ſtopping up all the openings and every ſmall crevice of the ſhip (as was alſo neceſſary in the preceding proceſſes), a number of iron pots, properly ſecured, are to be placed in the *hold*, *orlope*, *gun-deck*, &c. Each of theſe are to contain a layer of charcoal at the bottom, then a layer of brimſtone, and ſo alternately three or four layers of each, upon which the arſenic is to be ſprinkled, and on the top of it ſome oakum dipped in tar is to be laid to ſerve as a match. The men, upon ſetting fire to the oakum muſt ſpeedily leave the place, ſhutting cloſe the hatchway by which they came up.

From the known and experienced efficacy of theſe proceſſes, it appears, that fire and ſmoke are the moſt powerful agents for annihilating infection; and, it may be preſumed, even the plague itſelf. This is in ſome meaſure agreeable to what we learn from the ancient records of phyſic.—But the prepoſterous uſe, or rather abuſe, of fire on ſuch occaſions, has cauſed its effects to be diſregarded by ſome, and to be ſuſpected of miſchief by others. The modern practice of burning large fires in the open air, in the ſtreets, and about the walls of towns infected with the plague or other contagion, is founded on principles groundleſs and erroneous; and has therefore been found by experience not only unſucceſsful, but hurtful. But though this muſt be allowed, it doth not thence by any means follow, that when once a houſe hath been

infected, and the patients removed from it, the doors and windows at the same time being shut, that such fires will then prove hurtful; or that, by this method of purification, all the seeds of contagion will not be effectually destroyed. Whenever, therefore, persons die of a spotted fever, a malignant sore throat, the small-pox, or any distemper found to be communicable from the sick to others, the corpse ought quickly after death to be removed into another room; that in which the person died should be well aired, by having the windows opened, till a charcoal fire be kindled, with some rolls of sulphur upon it; after which, both doors and windows should be kept shut for a considerable time, not less than eight or ten hours, till the room be thoroughly smoked. In several ships, where there are the fairest opportunities of trying and judging things of this nature, the contagion of the small-pox has been entirely stopped by wood-fires, sprinkled with brimstone, kept burning and closely confined in the infected place. In a word, a judicious and proper application of fire and smoke is the best means for the destruction and utter extinction of the most malignant sources of disease; and they are besides the greatest purifiers of all bad and tainted air.

Next to the smoke of wood for purifying a tainted air, that of gun-powder is to be esteemed the best; and it has this further good property, that it is entirely inoffensive to the lungs. The cascarilla-bark, when burning, gives a most agreeable scent to the chamber of the sick; and is at least an elegant preservative, and may prevent bad smells from taking effect. The steam of camphorated vinegar warmed, is still more powerful for this purpose. But, besides correcting the ill quality of the air, and purifying the chamber, another good effect is produced from such steams and smoke as are inoffensive to the lungs. As soon as the vapour becomes dense, the nurses and patients become desirous of the admission of fresh air by the door or windows. Now it is certain, that the air in the chambers of the sick cannot be too often changed, provided the patient be well covered, and the curtains of his bed, if necessary, be drawn close. No remedy is so forcible to obviate the danger of foul air in a room or ward (occasioned by the obstinacy of nurses or relations), as ordering it to be frequently fumigated or smoked; a practice more frequent in other countries than in this, and of great benefit to the sick.

Lastly, with regard to the method of purifying goods, moveables, clothes, &c. which are supposed to harbour infection, it must be observed, that the usual custom of only unpacking and exposing such materials to the open air, is in many instances insufficient to destroy the latent seeds of disease.—It is certain, indeed, that in most cases the contagious particles are more readily and fatally communicated from the clothes of a sick person than from his body. The spreading abroad, therefore, of contaminated clothes to dry, or to be

aired, without a previous fumigation of them, may be of dangerous and fatal conſequence. All ſuch ſuſpected ſubſtances ſhould be firſt fumigated in a cloſe place, and in the ſame manner as an infected chamber, after which they may be ſpread abroad and expoſed to the air.—In infectious diſeaſes, eſpecially fevers, the linen of the ſick, or ſuch clothes about them as will admit of being waſhed, ought never at firſt to be put in warm water, as it is dangerous to receive the ſteam that may thence ariſe. It is neceſſary to ſteep them firſt either in cold water or in cold ſoaplees for ſeveral hours, that the filth may be waſhed off.

5. *Particular Medical Treatment.*] We muſt now proceed to give an account of the *method of cure*, after theſe means of *preventing* the infection from being received into the body have either been neglected or proved ineffectual. Here it is of the utmoſt importance to take the diſeaſe in the very beginning, before it hath time to corrupt the fluids to ſuch a degree as to endanger life. In theſe ſlight degrees of infection, a vomit (ſuch as Form. No. 1. or 2.) properly adminiſtered, eſpecially if ſucceeded by a bliſter, frequently will remove this diſorder, and prevent the fever which would otherwiſe unavoidably follow. Of this the following inſtances have been given. A lady afflicted with the bilious colic, had intolerably fetid diſcharges of corrupted matters upwards and downwards. A gentlewoman, only in paſſing the room, was immediately ſeized with a retching and ſickneſs, which continued twenty-four hours. The nurſe who attended was ſuddenly ſeized with a giddineſs and vomiting from the bad ſmell, which, as ſhe expreſſed it, reached into her ſtomach. The vomiting became more ſevere at night, accompanied with a purging and frequent ſhiverings. By means of an emetic both evacuations were ſtopped: notwithſtanding which, for ſome days afterwards, ſhe continued to have frequent tremors, and a violent head-ach, with a low irregular pulſe; and did not recover ſo ſoon as the patient.

Such ſlight degrees of infection have been often obſerved to be derived from patients of a groſs habit of body, when labouring under inflammatory diſeaſe, and even other complaints. A man was ſent to Haſlar hoſpital, ſuppoſed to have a fever. He was furiouſly delirious, with a quick full pulſe. Notwithſtanding plentiful evacuations, this delirium continued for two months with ſhort intervals; when the caſe was found to be plainly maniacal. A nurſe, upon raiſing this perſon up in her arms, perceived an intolerably bad ſmell, and was inſtantly ſeized with ſhiverings, ſickneſs, and head-ach. Finding herſelf very ill, ſhe took a vomit in ſix hours afterwards, and paſſed the night in profuſe ſweats by means of a ſudorific draught. Next morning the violence of the head-ach was but little abated; upon every attempt to move, ſhe complained of a burning heat and pain in her

forehead, and became giddy. Her inclination to drink was frequent, and her pulſe low and quick. A bliſter was immediately applied to the back; as ſoon as the bliſter took effect, the head-ach and thirſt entirely left her, and the pulſe was calm. Next day ſhe aroſe and was well.

Many ſimilar inſtances of infection have been obſerved from putting the dead into their coffins. In particular, one man, who, from performing that duty to his meſſmate, was ſo ill, even after the operation of the vomit, as to require a bliſter. In the courſe of one week two nurſes were infected by a perſon in the ſmall-pox. Both were ſeized in like manner with ſhiverings, ſickneſs, and head-ach; the one upon receiving the patient's breath, the other upon making his bed. In one, a pain darted into her breaſt; in the other, into the breaſt and in the ſmall of the back. The complaints of the former were ſpeedily removed by a vomit, though ſhe continued to have irregular returns of ſhiverings for three days afterwards. But in the latter, though the head-ach, ſickneſs, and rigors, were greatly abated by the vomit, yet a conſtant heat and thirſt, with a low pulſe, and a violent pain in the breaſt, indicated the neceſſity of applying a bliſter to the affected parts, which next morning removed all her complaints.

Some are immediately ſenſible of having received an infection from the firſt attack: they generally compare the firſt impreſſion to an earthy, diſagreeable ſmell, reaching down, as they expreſs it, into the ſtomach, as from a grave newly opened, but not quite ſo raw as the cadaverous ſtench; and the effects of it, ſhivering and ſickneſs, are inſtantaneous. It is a ſmell difficult to deſcribe; but it is well known to the nurſes and attendants about the ſick, as it uſually accompanies fevers of extreme malignity, and, with the peculiar diſcharges from the bliſtered parts, may be reckoned among the conſtant ſymptoms of a bad fever. Some compare the ſmell to that of rotten ſtraw. It often reſembles the diſagreeable ſmell of a perſon labouring under the confluent ſmall-pox at their turn, though not ſo ſtrong. One perſon, on receiving the infection, was ſenſible of ſomething like an electric ſhock through his body. But many are not ſenſible of any effect from an infection at firſt; and an infection from a fever will ſometimes continue for many days, nay weeks, diſcovering itſelf chiefly by irregular ſhiverings, ſometimes ſo ſevere as to oblige the patients to have recourſe to their beds once or twice a-day; ſometimes every other day.—Among a number thus affected, it alſo appears, that ſuch as are put into unſeaſoned chambers, or have ſat down on the cold ground, lain in a raw damp apartment, &c. are immediately ſeized with a ſickneſs at ſtomach, ſometimes with a dangerous purging, and often with fevers, accompanied with bad ſymptoms, which others have entirely eſcaped.

It now remains to conſider the proper method of curing putrid

fevers, on the ſuppoſition that the infection has been allowed to operate till the blood becomes radically tainted, and of conſequence the nervous ſyſtem affected to ſuch a degree, that its power cannot be reſtored by any of the ſimple medicines above mentioned. Here alſo authors agree, that a change of air, when it can be effected, is abſolutely neceſſary, and often contributes more towards the removing of the diſeaſe that all the medicines that can be exhibited. The utility of this change will appear from what hath been formerly ſaid; and we ſhall only further alledge one inſtance from Dr. Lind, in which the effects of bad air appear to a degree almoſt incredible. "It is remarkable (ſays he), that in the laſt war, the Engliſh ſhips which touched at Batavia ſuffered more by the malignant and fatal diſeaſes of that climate, than they did in any other part of India, if we except a fatal ſcurvy which once raged in that fleet at ſea. Soon after the capture of Manilla, the Falmouth, of 50 guns, went to Batavia, where ſhe remained from the latter end of July to the latter end of January; during which time ſhe buried one hundred ſoldiers of the 79th regiment, and ſeventy-five of the ſhip's company; not one perſon in the ſhip having eſcaped a fit of ſickneſs, except her commander Captain Brereton. The Panther, a ſhip of 60 guns, was there in the years 1762 and 1764; and both times during the rainy ſeaſon. In the former of theſe years, ſhe buried ſeventy of her men; and ninety-two of them were very ill when ſhe left the place. In the year 1764, during a ſhort ſtay, twenty-five of her men died. The Medway, which was in company with her, loſt alſo a great number of men. Nor was the ſickneſs at that time confined to the ſhips; the whole city afforded a ſcene of diſeaſe and death: ſtreets crowded with funerals, bells tolling from morning to night, and horſes jaded with dragging the dead in hearſes to their graves. At that time a ſlight cut of the ſkin, the leaſt ſcratch of a nail, or the moſt inconſiderable wound, turned quickly to a ſpreading putrid ulcer, which in twenty-four hours conſumed the fleſh even to the bone. This fact is ſo extraordinary, that, upon a ſingle teſtimony, credit would hardly be given to it; yet on board the Medway and Panther they had the moſt fatal experience of it, and ſuffered much from it."

But where a change of air was impracticable or ineffectual, and where the fever had already made ſome progreſs, Sir John Pringle generally took away ſome blood if the pulſe was full. When the ſymptoms ran high, a plentiful evacuation of that kind ſeemed indicated; yet it was obſerved that large bleedings generally did harm, by ſinking the pulſe, and affecting the head. Nor was a moderate bleeding to be repeated without caution; even thoſe whoſe blood was fizy, unleſs the lungs were inflamed, were the worſe for a ſecond bleeding. If the head only ſuffered, it was much ſafer to uſe leeches than to open a vein in the arm;

but in the delirium with a ſunk pulſe, even leeches were hurtful. Many recovered without letting blood, but few who loſt much of it.

Dr. Fordyce ſays we are to endeavour to leſſen the fever at the beginning by the emetic (No. 2.), followed by the draught (No. 31.); but profuſe ſweating is not to be attempted. If it continue, however, in the evenings following that of the emetic, until the fifth day;

(No. 40.) ℞ Sacch. Alb. gr. xx.
Antim. tartar. gr. ſs. ad gr. j.
Divide in pulv. ij. capiat unum hora viij. alterum hora xj. veſp. cum Hauſt. ſequent.

(No. 41.) ℞ Antim. Tart. gr. ¼ ad gr. j.
Sacch. Albg. r. x.
Miſce fiat Pulvis.
Capiat quartâ vel ſextâ quâque horâ cum Hauſt. ſequent.
℞ Aq. Menth. vulg. ℥iß.
Sp. Nuc. Moſch. ʒij.
Syr. Moror. ʒij.——M. Ft. Hauſt.

Or it is better to exhibit the medicine in the following manner:

(No. 42.) ℞ Antim. Tart. gr. xxxx.
Solve bulliendo ex Aq. Pur. ℥ij.
Solutioni fere bullienti adde Vin. Alb. dulcis ℥vj.
Sumat gtt. xxv. et ſupra, quartâ, quintâ, vel ſextâ quâque horâ; nauſea non tamen, excitanda.

At the beginning, through the whole periods, gentle ſedatives may be uſed.

(No. 43.) ℞ Aq. Fontis. vel Cinnam. vel Menthæ ſativæ ℥iß.
Succ. Limon. vel Mororum,
vel Acid. Vitr. vel Mur. q. ſ. ad gratam acedin.
Syr. Violar. ʒj.
Ft. Hauſt. quartâ quâque horâ ſumend.

If the belly be not ſufficiently open, one of the following draughts may be given:

(No. 44.) ℞ Infuſ. Sen. ℥jß.
Sal. Glauber. ver. ʒij. ad ʒiij. vel
Tart. Vit. ʒß. ad ʒi. vel
Tart. Solub. ʒi. ad ʒij.
Træ. Senn. ʒij.
Mannæ ʒj. Miſce.

The foregoing treatment, however, is leſs proper in hot climates than in our own; for in the former, it is neceſſary to be aware of the debilitating powers of antimony, or at leaſt to be watchful that no partial ſecretion is brought on by its uſe. Dr. Fordyce indeed ſays, if the ſymptoms of weakneſs be conſiderable, it will be improper to uſe (No. 42.), or continue it to this time of the diſeaſe.

Vomits alſo muſt be given with caution; for though they may

be of use by way of prevention, yet in the advanced state of the disease, when the patient has all along complained of a sickness at stomach, they are evidently unsafe. Here the antiseptic quality of fixed air is of much use.

(No. 45.) ℞ Kali præp. ℈i.
Succ. limon. ℥j. Misce f. Haust.

This, given in the act of effervescence, twice or thrice a-day, is generally attended with happy effects. Clysters of fixed air itself have also been found very serviceable. Even in very bad stages of the disease, where a putrid colliquative looseness has taken place, these have been known to alleviate the symptoms.

It has been of late the practice of some medical practitioners, to administer *yeast* in putrid fevers, and other diseases which have tended towards putridity. As an acknowledged *antiseptic*, we have no hesitation in yielding our assent to such a remedy being resorted to in cases not to be considered as formidable; those for instance that usually occur in Britain. But in the fevers of the West Indies, without some farther and decisive evidence in its behalf, we are inclined to think a medicine endued with such moderate powers should scarcely be preferred to others which are better known to physicians. By no means wishing, however, to prejudge the question, we shall here introduce a few cases which the advocates for the use of yeast have brought forward in its support, without regard to their being precisely such as fall under the head of putrid fever.

Dr. Rolfe, physician to a dispensary in London, inserts the following account in a periodical work:

"I was requested," says he, "to visit Margaret Jackson, aged 42, who had been ill for some time with a putrid fever; she was then delirious, her tongue, teeth, and lips, were covered with a black fur, and she had also a violent diarrhœa. I thought this a favourable opportunity for trying the yeast: I told the daughter, the time for medicine to be of service was gone by, but if she would attend punctually to my directions, I could lay down a plan that might possibly relieve her mother. The girl, anxious for her mother's recovery (having left her place of service to nurse her), promised she would be punctual. Being a truly distressed family, I gave them money to purchase yeast, which I continued to do through their illness, as their situation would otherwise exclude them from getting a sufficient quantity, and the case might be imperfect for the want of it. The woman continued taking it, diluted with water, until she was perfectly recovered, without any other medical assistance, and there also seemed less prostration of strength when the fever was over, than I ever found in a patient before, considering the severity of the disease, and the melancholy circumstances of the patient. A few days afterwards the husband came home ill, and in twenty-four

hours he was delirious; the symptoms nearly the same as the wife, excepting the husband being very costive, which I, however, totally disregarded, as I did the wife's diarrhœa, leaving Nature to take her own course. The husband being fully convinced of the effect of the yeast on his wife, took it immediately, and continued it through the whole course of his delirium, rejecting every thing else until he was perfectly recovered. At the same time one of the daughters was taken ill, and by a deal of exertion, got down a considerable quantity, by which she got quite well. Before this daughter got well, the eldest was taken ill, and pursued the same plan, by which means she also was perfectly recovered."

Dr. BRADLEY, physician to the Westminster hospital, publishes the following account of the effects of yeast, in the Medical and Physical journal:

"A contagious fever, of the most malignant kind, appeared in London and Westminster during the months of November and December last. A delirium often commenced as soon as the third day; and a petechial eruption, though more florid than usual, appeared on the breast and trunk. The other symptoms differed little from those usually observed in gaol or contagious fevers.—A female patient, afflicted with this formidable disease, and with permanent delirium, was admitted into the Westminster hospital during the last month, and, as usual, put on the generous and cordial plan; but in a few days neither food nor medicine could be administered, on account of the repugnance of the patient. In this desperate situation I directed the apothecary to procure some fresh yeast, and to dilute it if necessary, of which a tablespoonful was to be given every four hours. The patient took it without difficulty; it agreed with the stomach and bowels, and in three days an evident amendment was observed. The patient is now perfectly cured of the fever, and no other remedy, not even wine, was employed in conjunction with the yeast."

The following account of the medicinal application of yeast is given to the public, through the same medium, by Dr. LEWIN, physician to the dispensary at Liverpool. After some remarks not immediately to our purpose, he says,

"In the first fever wherein I adopted this practice, the patient, a young woman of 19, of ruddy complexion, naturally plethoric, and liable to inflammatory ailments, was informed of its origin, and that yeast was far from being commonly in use, but that it would at least be harmless. The family possessing more good sense and energy of mind than generally happens to the uneducated, made none of those frivolous objections so often met with, where a patient is trusted with the knowledge of the medicine prescribed. She had taken the infection from her sister, whose case had been truly deplorable, and nearly desperate. The sisters were obliged

to lie in one bed, and their diet had been latterly poor, as the mother was afflicted with dyſentery during and prior to the ſickneſs of her two fatherleſs daughters. Being patients belonging to the diſpenſary, and the emetic which was ordered previouſly to any other medicine being loſt, the circumſtance was concealed till after recovery. She dreading a ſituation ſimilar to that of her ſiſter, whom ſhe had watched night and day with all the aſſiduity of affection, took yeaſt to the amount of a meatſpoonful, four, five, and ſometimes ſix times a-day: her natural colour returned in about five days; and, to my ſurpriſe, I found her affected with a ſlight, though complete cynanche tonſillaris; on which I omitted the medicines, and ordered merely gargles with an external liniment; and in a few days ſhe was again able to return to the duties of a nurſe to her ſiſter, which the mother, though now recovered, was ſcarcely equal to perform. Some have complained much of an uneaſy ſenſe of diſtenſion ariſing from the medicine, a circumſtance which has cauſed more than one patient to relinquiſh its uſe, as did this perſon on the laſt day of her taking it. I ought to add, that in ſome inſtances diſappointment has attended its exhibition, though, ſave in hoſpitals, we cannot rely on the adoption of a practice which popular prejudice ridicules, or ſtarts at. In ſome inſtances, I have no doubt but deception has been practiſed. In a caſe of cynanche maligna, as a gargle, and internally adminiſtered, I thought it aided other remedies."

The laſt teſtimony we ſhall adduce in this place is that of Mr. GROSE, of Winſlow, who does not attempt to give a name to the diſeaſe in which yeaſt appears to have been of ſervice. No *putrid* ſymptoms indeed ſeem to have been manifeſted.

"In May, 1798, the child of John J——— (then reſident at Coventry, but now an inhabitant of S——y), aged two years, was attacked with a ſevere pain in the head, and cough, which, by diminiſhing his appetite, and his parents being unable to procure him proper ſupport, reduced him to a very weak condition. Medical advice was obtained, and but little benefit derived; the cough ſtill continued, and a gradual waſting of the body enſued. Providentially for the helpleſs ſufferer, the father was informed, by a clergyman, who occaſionally practiſed phyſic, of the ſalutary effects of yeaſt (or, as it is ſtyled here, *barm*) in ſuch caſes; this medicine having been adminiſtered by him to ſeveral infants in a ſimilar ſituation, and with the moſt beneficial effects.

"They conſented to try it, and the child was to take three teaſpoonsful night and morning. For the firſt week, no apparent advantage was derived; the body was rather purged, and they feared it would weaken him too much. The diet was ſimple, milk or broths, for his appetite was ſmall; though he was oc-

ſionally permitted to have a little raiſin wine diluted with ater.

" Towards the end of the ſecond week, the cough conſiderably ated, the colour became more diffuſed, the purging was incon- lerable, and his appetite amended; and, with gentle exerciſe, s ſtrength rapidly returned. The parents continued the uſe of only three weeks, and at the concluſion of that period the child as perfectly recovered. It is now a year and a half ſince his diſpoſition, and from that time to this he has experienced no turn of his former complaints, but is a ſtout, healthy boy.

" It was in conſequence of witneſſing this ſingular recovery, hat a woman, whoſe child was nearly in the ſame ſituation, etermined to try the efficacy of the yeaſt, and in a month the atient was reſtored, to the inexpreſſible joy of the mother and urpriſe of thoſe who had been acquainted with the circumſtances. During the adminiſtration of the yeaſt to both, no other medicine was reſorted to, nor were they attentive to diet. I never knew it iven in ſuch a caſe before; but as it has been productive of the moſt happy effects in the two firſt, I ſhall not only recommend it o every one, but the firſt opportunity that occurs ſhall give it nother trial.

" The yeaſt preferred was the neweſt, becauſe it was not ſo perient as the ſtale, and to both the children it was given by itſelf. It neither occaſioned nauſea, flatulence, nor pain."

We muſt not, however, put too much confidence in medicines of this kind. Mild aſtringent cordials, eſpecially wine and peruvian bark, are the only reſources in theſe diſorders. Dr. Fordyce gives the following:

(No. 46.) ℞ Vin. Rubr. Luſit. ℔ij.
Cort. Peruv. } a a ʒij.
—— Cinnam. }

Digere per horas xlviij. calore 100 grad. Therm. Fahren. et cola. Capt. Coch. iiij. ter indies.

Sir John Pringle obſerves, in the low ſtate of theſe fevers, and in great ſinkings, which either come after unſeaſonable bleedings or long want of nouriſhment, port wine proved a moſt grateful and efficacious cordial, to which nothing was comparable. The common men had an allowance, from a quarter to half a pint in a day, of a ſtrong kind, made into whey, or added to the panada which was their ordinary food. But to others out of the hoſpital, he uſually preſcribed Rheniſh or a ſmall French wine, whereof ſome conſumed near a quart per day, and part of that undiluted. Nay, ſo great was the virtue of wine in this ſtage of the fever, that ſeveral were known to recover from the loweſt condition, when, refuſing the bark on account of its taſte, they took nothing but a little panada with wine and a volatile diaphoretic mixture (No. 8.) every two or three hours by turns. Perhaps

there is no rule more neceſſary in this ſtate, than not to let the patient when low remain long without taking ſomething cordial and nouriſhing; as many have been obſerved paſt recovery, by being ſuffered to lie a whole night without any ſupport about the time of the criſis. In the advanced ſtate of this fever the ſick are remarkably low; and therefore Hoffman adviſes in ſuch caſes, that they ſhould be conſtantly kept in bed, and not permitted even to ſit up in it. In the laſt ſtage of this fever, as well as in that of the ſea-ſcurvy, it would ſeem that the force of the heart was too ſmall to convey the blood to the brain, except when the body is in an horizontal poſture.

But, however neceſſary wine and bark may be in the low ſtage of this fever, we muſt remember, that theſe remedies are to be adminiſtered only as antiſeptics and ſupporters of the *vis vitæ*, without aiming at thoroughly raiſing the pulſe or relieving the head, or forcing a ſweat by them, before nature points that way, and which Sir John Pringle ſeldom obſerved before the 14 h day. For though the patient may die before that time if he has been largely bled, or if the cordial medicines have been given him too freely, yet ſuch means as he made uſe of were not powerful enough to bring on a criſis ſooner.

In the low ſtate of the hoſpital-fever, a ſtupor was a conſtant attendant, which was very apt, in the evening, to change to a ſlight delirium. If this was all, as being in the common courſe, nothing was done. But if the delirium increaſed upon uſing wine, if the eyes looked wild, or the voice became quick, there was reaſon to apprehend a phrenitis, and accordingly it was obſerved, that at ſuch times all internal heating medicines aggravated the ſymptoms; and in theſe caſes bliſters were of the greateſt ſervice. Fomentations of vinegar and warm water for the feet, our author is of opinion, would anſwer better than either ſinapiſms or bliſters, provided they were long enough and often enough applied. In the inflammatory fevers, he has known theſe fomentations have little effect for the firſt hour, and yet ſucceed afterwards. For internal medicine, the bark was omitted for ſome time, but the patient was continued with an acidulated drink, *viz.* barley-water and vinegar; and treated alſo with *camphor*, *pulvis contrayerva compoſitus*, and *nitre*, as was uſual in the beginning of the fever. If the delirium was of the low kind, decoction of the bark with wine were the only remedies: for in no inſtance was the delirium perfectly removed till the time of the criſis. It muſt alſo be obſerved, that a delirium may ariſe in putrid fevers from two oppoſite errors; one from large and repeated bleedings, and the other from wine and the cordial medicines being taken too early. It appears therefore how nice the principles are that regard the cure; as neither a hot nor a cool regimen will anſwer with every patient, or in every ſtate of the diſeaſe.

It is probable, that, in cases where antimonials are to be given, their being joined with camphor would lessen, if not entirely obviate, the existing objections to their use.

Dr. Fordyce says, that if in the latter part of the disease, with great weakness, there be considerable remission without stupor; or if there be general relaxation of the secretories;

No. 47.) ℞ Aq. Menth. Vulg. ℥jß.
Pulv. Cort. Peruv. gr. xv. ad 3ß.
Syr. e Cort. Aur. 3ij.
Aq. Menth. Piper. 3j. M. F. Haust. Vel loco Pulv. Cort. Peruv. decoct. sequent. ℥ß. ad ℥j.

No. 48.) ℞ Cort. Peruv. subt. Pulv. ℥j.
Aq. Font. ℔i.
Coquantur simul per decem minut. prim. vase clauso.
Capt. quartâ vel sextâ quâque horâ.

Dr. Saunders recommends the following:

No. 49.) ℞ Decoct. cinchonæ ℥vj.
Tincturæ ejusdem comp. ℥j.
Acid. vitriol. dilut. 3j.
Syr. aurant. cort. ℥ss. M.
Hujus misturæ cochlearia iv. horis duabus interpositis, capienda.

Dr. Fordyce expresses a doubt of the propriety of employing simple stimulants in this disease; but where the cordial and antiseptic plan is thought proper, the following formulæ, adopted from Pringle and Huxham by the late Dr. Hugh Smith, deserve attention:

No. 50.) ℞ Rad. serpentar. virgin. contus.
Cort. Peruv. pulv. aa. 3iij. coq. in
Aq. fontan. ℔j. ad dimidiam;
Colaturæ adde
Aq. cinnam. ℥jß.
Syr. e cort. aurant. 3ij.
M. capiat coch. iiij. quarta vel sexta quaque hora.

No. 51.) ℞ Cort. Peruv. opt. pulv. ℥ij.
Flavedin. aurant. hispal. ℥jß.
Rad. serpentar. virg. 3iij.
Croci anglican. ℈iiij.
Coccinel. ℈ij.
Spt. vini Gallic. ℥xx.
Ft. infusio clausa vase per dies aliquot (tres saltem quatuorve) deinde coletur.—Dosis 3j. ad ℥ß. quarta, sexta, vel octava quaque hora cum acidi vitriolici diluti gtt. x. xv. vel xx. ex quovis vehiculo appropriato.

So also the following, from the pharmacopœia of Guy's hospital:

(No. 52.) ℞ Balſami Peruviani ℈iv.
Ovi unius vitelli
Aquæ Menthæ ſativæ ℥vij.
Syrupi zingiberis ℥ſs. M. ſumat coch. iij. vel iv. bis terve indie

If a diarrhœa came on in the decline of the fever, Sir John Pringle obſerves it was moderated, but not ſuppreſſed, by addin an opiate to the uſual medicines. For though the looſeneſs ma be conſidered as critical, yet as the ſick were too low to bea evacuations, there was a neceſſity for reſtraining it in ſom meaſure; and it has often been obſerved, that when it has bee treated in this manner, about the uſual time of the criſis, th patient has fallen into a gentle ſweat, which has carried off th diſeaſe. In the worſt caſes of this fever, and eſpecially when i coincides with the dyſentery, the ſtools are frequently bloody in which dangerous ſtate, if any thing could be done, it wa attempted by medicines of the ſame kind. In proportion t the putrid nature of the ſtools, opiates and aſtringents were uſe with the greater caution.

If the diſeaſe terminated in a ſuppuration upon one of the paroti glands (for the gland itſelf does not ſuppurate), the abſceſs wa opened without waiting for a diſtinct fluctuation, which migh never happen; the pus being often ſo viſcid, that after it was rip the part felt nearly as hard as if the ſuppuration had not begun.

Almoſt every patient, after the fever, complained of want c reſt, frequently of a vertigo or confuſion of the head, of a continu ation of the deafneſs, or of other ſymptoms commonly calle *nervous*. An opiate was then given at night; and in the day ſom ſtrengthening medicines, ſuch as the bark and the acid of vitrio In theſe caſes, the bark was found not only to be the be ſtrengthener, but the ſureſt preſervative againſt a return of th diſeaſe. For this laſt intention the convaleſcent was ordere about three drachms a-day for ſix or ſeven days together; an afterwards, if he remained longer in the hoſpital, ſome ſmalle quantity daily. But if there was any appearance of a hecti fever from an inward abſceſs, the caſe was treated accordingly Upon comparing ſome of the remaining ſymptoms of thoſe wh recovered, with the condition of the brain in thoſe who died an were opened, Sir John Pringle was induced to think, that ſom part even of that ſubſtance might ſuppurate, and yet the perſo recover.

Sometimes the patient falls into an irregular intermittent which, if not of a hectic nature from an internal abſceſs, ma proceed from neglecting to clear the *primæ viæ*. For it is eaſy t conceive, that after a long fever of ſuch a putrid nature, at tended with languor of the bowels, the fæces may be ſo muc accumulated, and ſo corrupted, as to occaſion new diſorders. I

such cases, after proper evacuation by a purge, the bark was almost an infallible remedy.

The *Yellow* Fever.

Typhus cum flavedine cutis.

Typhus icterodes, *Sauv.* sp. 7.

Febris flava Indiæ Occidentalis, *Warren.* Malignant Fever of Barbadoes, *Hillary*'s Diseases of Barbadoes. *Lining*, on the Yellow Fever of South Carolina; Edin. phys. and liter. Essays, vol. ii. *Mackittrick* de Febre flava Indiæ Occidentalis, Edin. 1766. Endemial Causus. *Moseley* on Tropical Diseases.

1. *History.*] The following account of the rise and progress of this disease, to which, in the author's opinion, the appellation of *endemial causus* may be more properly applied, is given by Dr. Moseley in his excellent treatise on Tropical Diseases.

"The *Endemial Causus*," says he, "or *Yellow Fever*, which is the terror of Europeans newly arrived in the West-Indies, is called by the French la Maladie de Siam.

"Monsieur Pouppé Desportes, who practised physic at St. Domingue from 1732 until 1748, and who had more experience, and has written from better information on the diseases of that colony, than any of his countrymen, says, this fever was so called from its being first taken notice of in the island of Martinique, at a time when some vessels were there from Siam.

"'Le premier évenement qui l'ait fait remarquer, a été la relâche, à la Martinique, d'une nombreuse escadre qui venoit de Siam, & dont l'équipage, pendant son séjour dans cette colonie, fut affligé d'une fievre maligne, ou pestilentielle, qui fit périr un grand nombre de matelots.' And notwithstanding this account of it by M. Desportes, he immediately says, 'Cette maladie attaque très rarement les créoles ou les sauvages habitans de l'isle: les Européens destinés à vivre sous un climat plus tempéré, en sont, pour ainsi dire, les seules victimes*.'

"This account, though probably true enough as to the time of its being first observed in the French colonies, is extremely incorrect in other respects: for M. Desportes has not only admitted a supposition that the disease originated among those East-Indian mariners, but calls it pestilential, and says, that Europeans are almost the only victims of it.

"The generality of the French writers say that it was brought directly from Siam, in a merchant ship, and communicated to the people of Martinique, whence the contagion was carried to St.

* Vol. I. p. 191 & 192, Hist. des Malad. de St. Domingue.

Domingue, but that the ſailors were the only people attacked by it, whence it was alſo called la fievre matelotte*.

" This account of the origin of the diſeaſe has been univerſally credited by the French writers, who have not been at the trouble to conſider, that a diſeaſe brought from Siam in the Eaſt Indies, in a ſimilar latitude to the Weſt-Indian iſlands, would be moſt likely to affect the natives, living in a climate ſimilar to that in which the diſeaſe originated, rather than Europeans of ſo different a temperament of body. But the fact is, that this diſeaſe never attacks either white or black natives of hot climates; neither was it brought from Siam: and though it is poſſible, from the heat of the climate, that it may frequently appear there, or in any other tropical country (though Barrere ſays it is unknown at Cayenne†), no hiſtory of that country, that I have yet met with, mentions ſuch a diſeaſe‡; notwithſtanding what many writers have boldly advanced to the contrary§.

" The Spaniards call it the vomito prieto, or the black vomiting, from its moſt direful ſymptom. By this diſeaſe their galleons ſometimes loſe the principal part of their men, in the Weſt Indies, particularly at Porto Bello and Carthagena.

" That this diſeaſe is a ſpecies of the καυσος of Hippocrates‖, Aretæus**, and Galen††, that is, the febris ardens, or cauſus, as it is called, I think there can be no doubt;—aggravated by climate—incidental only to the groſs, inflammatory, and plethoric—at any ſeaſon of the year—and totally different from the remittent

* The ſeamen at the Cape, in Hiſpaniola, in the ſummer of 1734, were nearly half of them cut off by this fever It has often ſince that time made its appearance there among the ſailors, and has been very fatal.

† Nouvelle Relation de la France Equinoxiale, p. 61.

‡ Loubere, in his Hiſtory of Siam, part ii. chapter iv. ſays, " Among the moſt dangerous diſeaſes there, are fluxes and dyſenteries, from which Europeans that arrive at this country have more trouble to defend themſelves than the natives of the country, by reaſon that they cannot live ſober enough. The Siameſes are ſometimes attacked with calentures, in which the tranſport of the brain is eaſily formed, with defluxions on the ſtomach Moreover, inflammations are rare, and the ordinary continued fever kills none, no more than other places in the torrid zone. The external does ſo exceedingly weaken the natural heat, that of an hundred ſick perſons, Mr. Vincent, the provincial phyſician, declared, that he ſcarce found one that had the fever, or any other hot diſtemper. There are a great many cancers, abſceſſes, and fiſtulas. The eryſipelas is here ſo frequent, that among twenty men, nineteen are infected with it." &c.

§ Warren, a phyſician at Barbadoes, in his treatiſe concerning the Malignant Fever in Barbadoes, written in 1739, ſays, " it is called la Maladie de Siam, from a country of that name in the Eaſt Indies, where it is a conſtant inhabitant." Page 3.

‖ Lib. de Acutorum Morborum Victu, et Lib. de Affectionibus.

** De Cauſo, Lib. II Cap 4. de Cauſ. et Sign. Acut. Morb.

†† Comment. 4. in Lib. Hipp. de Acut. Morb. Victu.

bilious fever, to which all habits of body are ſubject, in hot climates, particularly after rains, and in the fall of the year.

" The cauſus, the moſt ardent fever in temperate climates, as deſcribed by the fathers of phyſic, is a diſeaſe ſeldom ſeen in theſe northern parts of Europe; and never attended with that violence of ſymptoms, which accompanies the ſame deſcription of diſeaſe in hot climates. And whether in latitudes ſo mild as thoſe of Spain, Italy, Greece, and the Archipelagan iſlands, the cauſus has ever been attended with black vomiting, as in the Weſt-Indies, I cannot tell. Lommius mentions the vomiting of blood, and voiding black liquid ſtools, and black urine*.

" Critical, and ſymptomatical yellowneſs of the ſkin in the cauſus is enumerated among the ſymptoms by Hippocrates†; and the accurate Lommius particularly mentions the danger of that appearance before the ſeventh day; ' grave eſſe periculum ſignificatur ubi aurigo ante ſeptimum diem oritur‡.'

" The affinity of the ſymptoms, progreſs, and termination of a cauſus, in Europe, to thoſe of this fever of the Weſt-Indies, excepting the black vomiting, leaves no room to doubt that the difference of climate conſtitutes all the difference that is found between them. Therefore I have adopted the name of endemial cauſus; the propriety of which, I hope, will be juſtified in the deſcription of the diſeaſe.

" The black tongue is always mentioned as a ſymptom in the cauſus; of which appearance Hippocrates has made a judicious diſcrimination, that all other writers have omitted—The tongue, he ſays, ' primum, flava eſt; ſed procedente tempore nigreſcit. Si igitur per initia nigreſcat, celeriores ſunt liberationes; ſi vero poſtea, tardiores§.' Which is exactly the caſe in the yellow fever.

" Trallian ſays, in the genuine cauſus the tongue is black, but not in the ſpurious cauſus; yet he conſiders the latter as the moſt dangerous diſeaſe‖: and Lommius ſpeaks of the danger of the tongue being firſt dry, then rough, then black and foul¶.

" Hippocrates mentions, in other places, ſome circumſtances not enumerated in his deſcription of the cauſus, which we find correſpond with the yellow fever; and are convincing proofs that he had ſeen fevers attended with a vomiting of black blood (what the ancients ſometimes termed *black bile*), as in his prognoſtics he often mentions the fatality of that ſymptom; and ſome that were equally rapid with this diſeaſe.

* Lib. I. Med Obſ. † L. de Judicat.
‡ Loc. cit. & Hippocrat. Aphor. 62. Sect. 4.
§ Lib. de Diebus Judicatoriis, Cap. 5.
‖ Lib. XII. Cap. 3. ¶ Loc. cit.

" Of the cauſus, he ſays, 'febris ardens fit, quum reſiccatæ venulæ tempore æſtivo, acres et bilioſos ichoras ad ſe attraxerint: ac febris multa detinet, corpuſque quemadmodum ab oſſeariâ laſſitudine affectum, laborat, doletque. Fit plerumque tum ex longo itinere, tum longa ſiti, quum arefactæ venulæ acres calidaſque fluxiones ad ſe attraxerint. Fit vero lingua aſpera, et ſicca, valdeque nigra; partiumque ventris morſu dolet; dejectiones tum liquidæ, tum pallidæ fiunt; ſitis adeſt vehemens, et vigiliæ, atque interdum mentis alienationes*.'

" He obſerves, alſo, 'febris et ſitis vehemens afficit, lingua aſpera et nigra, ſpiritus ſanè calore redditur, color aliquantulum bilioſus fit, et ſputa bilioſa. Atque ægro exteriora frigida ſunt, interiora verò admodum calent†.'

" He ſays there is another ſpecies of cauſus, in which, 'alvus ſubducitur; ſiti ſcatet; lingua aſpera, ſicca, ſalſa; urinæ ſuppreſſio; vigilia; extrema refrigerata‡.'

" Of the two ſpecies of this diſeaſe, mentioned by Hippocrates, Galen denominates one a genuine and the other a ſpurious cauſus; one was ſuppoſed to proceed from bile, the other from phlegm. In the former, the tongue was black; in the latter not. Trallian, and other writers, have adopted this diſtinction. Galen alſo remarks, that the coldneſs of the extremities is a ſymptom only of the ſpurious cauſus, and then only when the fever is malignant; but that in the genuine, bilious, and burning cauſus, the heat of the body is extended to the extremities."

After quoting various paſſages from Aretæus and Lommius in defence of the name Dr. Moſeley has thought proper to adopt when ſpeaking of what has, in leſs definite language, ſo univerſally been called yellow fever, he proceeds thus:

" Notwithſtanding that degree of cauſus which we call the yellow fever, appears from the nature of the diſeaſe to be indigenous to the torid zone, there was no notice taken of it in the Weſt-Indies until nearly two centuries had elapſed from their diſcovery.

" Ulloa ſays, 'the vomito prieto, was unknown at Carthagena, and all along the coaſt, till the years 1729 and 1730. In 1729 Don Domingo Juſtiniani, commodore of the Guarda Coſtas, loſt ſo conſiderable a part of his ſhips' companies at Santa Martha, that the ſurvivors were ſtricken with aſtoniſhment and horror at the havock made among their comrades. In 1730, when the galleons under Don Manuel Lopez Pintado came to Carthagena, the ſeamen were ſeized with the ſame dreadful

* De Acut. Morb. Victu, Sect. 4. Art. 1, 2, 3, 4.
† De Affectionibus, Cap. 3.
‡ De Acut. Morb. Victu, Sect. 4. Art. 13, 14.

mortality; and so sudden were the attacks of the disease, that persons walking about one day, were the next carried to their graves. Unhappily, after all the experiments of the surgeons of the galleons, and physicians of the country, no good method of treating the disease was discovered; no specific for curing it, nor preservative against it.'—Voyage to South America, book I. chap. 5.

"Warren, though he lived at Barbadoes in 1739, supposes it never appeared in that island until about the year 1721, and that it was then brought from Martinique, in the Lynn man-of-war. He says, the second appearance of it there was in 1733, and that it then came also from Martinique.

"He undertakes to show, that it is a disease of Asiatic extract, and says, that 'a Provençale fleet arrived at Port St. Pierre in Martinique from Marseilles, on board of which were several bales of Levant goods, which were taken in at Marseilles, from a ship just arrived from St. Jean d'Acre (probably the Ptolemais of the ancients). Upon opening these bales of goods at Port St. Pierre, this distemper immediately shewed itself, many of the people were instantly seized, some died almost suddenly, others in a few days, and some lingered longer; and the contagion still spreading, made great havock at the beginning.'—He says he had this account from Mr. Nelson, an English surgeon, who was seized with the disease in Martinique, and died of it a few days after his arrival at Barbadoes.

"He says, it is 'probable that the same fever, or one of very near resemblance and affinity, may first have been carried among the American Spaniards (among whom it is now endemic), in somewhat a like manner; and that possibly some peculiar qualities in the air and climate might have fostered and maintained it there ever since.'

"And yet, he says, sea-faring people and new-comers are most obnoxious to it, 'such as had purer blood, and probably less adust than that of the natives; or of those whose constitutions had been, for many years, fitted and habituated to the climate.'

"How a climate should foster a disease, and a contagious one, and the natives of that climate be exempt from it, I cannot comprehend: but the whole story is fabulous, therefore it is unnecessary to reason on it.

"Towne, who practised in Barbadoes, and who wrote on the diseases of that island in 1726, takes not the least notice of this chimerical origin of the yellow fever, but considers it as an endemial disease in the West Indies; to which Europeans are subject on their first arrival: and Hillary, who wrote long after both of them, in 1759, says, it is 'indigenous to the West-Indian islands, and that it most commonly seizes strangers, especially those who come from a colder or more temperate climate.' He

ſays, 'a better enquiry would have informed Warren that this fever had appeared in Barbadoes, and the other Weſt-Indian iſlands, many years before; for ſeveral judicious practitioners who were then, and now are living (about the year 1760), whoſe buſineſs was viſiting the ſick, ſome of them almoſt eighty years of age, remember to have ſeen this fever frequently in this iſland, not only many years before that time, but many years before that learned gentleman came to it.'

"Hughes, who was not himſelf a medical man, ſays, in his Natural Hiſtory of Barbadoes, in 1750, 'Doctor Gamble remembers that it was very fatal here in the year 1691, and that it was then called the new diſtemper, and afterwards Kendal's fever, the peſtilential fever, and the bilious fever. The ſame ſymptoms did not always appear in all patients, nor alike in every year, when it viſited us. It is moſt commonly rife and fatal in May, June, July, and Auguſt, and then moſtly among ſtrangers; though a great many of the inhabitants, in the year 1696, died of it; and a great many at different periods ſince.'

"Warren, poſitive as to the origin and peſtilential nature of this fever, invented a treatment (in which bleeding was ſeldom or never to be performed, and the patient to take heating alexipharmics, and to be covered up with blankets) conſiſtently erroneous with his pathological principles. Yet among all this perverſion of reaſon, the rays of an excellent underſtanding frequently break forth, through the clouds of hypothetical chaos.

"But Warren addreſſed his book to Mead, whoſe tenets he had imbibed; and Mead was the Archimedes of phyſic:—give him but his poſition, and the whole Æſculapian world was turned upon the axis of a ſyllogiſm.—Nature was in thoſe days empiriciſm, and contagion and infection were faſhionable doctrines.

"Thucydides ventured only the reputation of common report, in tracing the plague of Athens through Africa and Egypt, down from Æthiopia*. But Matthæus Villanus, and Mead, ventured

* Diodorus Siculus, Lib. XII. Cap. 7. gives a very rational account of that diſtemper. He ſays, "the Athenians during this incurſion, durſt not come into the field, but kept cloſe within the walls of their city; by reaſon whereof a great plague raged among them. For a multitude of all ſorts of people being crowded together, it may be reaſonably concluded, that through the ſtraightneſs of the places, the air was corrupted and cauſed the infection." And of the ſecond plague, he ſays, "Abundance of rain had fallen in the winter, by reaſon whereof the earth being over-wet in many places, eſpecially in low and hollow grounds, the water lay like ſtanding pools; and thoſe being putrefied and corrupted by the heat of the ſummer, thence proceeded a miſt of groſs and ſtinking vapours, which corrupted the air, as it often happens about filthy marſhes; and beſides, the want of food much advanced the progreſs of the diſeaſe; for the year before, the fruits, by too much rain, were crude and unwholeſome."

"There

much farther; the former found no difficulty in bringing the plague, which originated in Venice in 1348, from Greece; and the latter in making the ſudor anglicanus a mutilated plague, and tranſporting it from the ſiege of Rhodes by the Turks, notwithſtanding the diſeaſe appeared five times, after long intervals, in this country, where it unqueſtionably was a genuine endemic. However, neither of theſe two gentlemen would, I believe, have ventured to follow the contagion of the yellow fever from Paleſtine to Marſeilles, and from Marſeilles over the Atlantic Ocean, to the Weſtern world.

" A French author, in a publication in 1776, at Paris, entitled *Des Moyens de conſerver la Santé, &c. aux Antilles ou Climats Chauds et Humides de l'Amérique*, ſpeaking of the yellow fever, ſays, 'c'étoit une ſorte de fièvre colliquative très-aigue.'—'Cette maladie qui étoit contagieuſe, fut d'abord traitée par d'abondantes ſaignées, mais ſans ſuccès; on fut plus heureux moyennant l'uſage intérieur des acides, et leur application extérieure. Ce que nous avançons ici n'eſt que ſur le rapport des autres; cette maladie n'exiſtoit plus à notre arrivée aux Antilles.'

" It is impoſſible to ſay what could give this gentleman an idea that the application and uſe of acids would cure the yellow

" There was likewiſe a third cauſe of this diſtemper, which was this. The Eteſian winds (north winds), which come at ſtated and certain times of the year, did not blow this ſummer, by whoſe gentle breezes the violent heat was conſtantly allayed, before, at other times; ſo that the heat being now exceſſive, and the air as it were inflamed, men's bodies now wanting the uſual refreſhment, contracted an evil habit, from whence aroſe, through the vehement and immoderate heat, all ſorts of burning diſtempers; and hence it was, that many ſeized with this diſeaſe, to free themſelves from the burning heat that was in their bodies, caſt themſelves into pits and wells. In the beginning of the diſtemper, before the ſun aroſe, through the coldneſs of the air that came from the water, their bodies would ſhake and tremble; but about noon, being ſo cloſe, and ſhut up together, they were ſuffocated with heat. At firſt, catarrhs and ſwellings of the throat came on, cauſed by the ſtench of the bodies that lay unburied, and the putrefaction of the ſoil. Then followed fevers, pains in the back, heavineſs of the loins, dyſenteries, blotches, and boils, over the whole body. Thus were they tormented by the plague. Others were ſtricken mad, and ran about the camp like wild beaſts, and beat every perſon they met. All help of phyſicians was in vain, both by reaſon of the violence of the diſtemper, and the ſudden diſpatch it made of many; for in the midſt of great pains and horrible torments, they died, commonly on the fifth, or at moſt on the ſixth day. But the Athenians judged that ſo grievous a diſtemper was from God, and therefore, according to the charge given them by the oracle, they purged the iſland of Delos, which was formerly dedicated to Apollo, polluted, as they conceived, by burying many dead bodies there. Therefore all the graves of the dead were dug up, and the urns were tranſported to the next iſland, Rhene; and a law was made that it ſhould not be lawful for any, for the time to come, either to bury, or to bear a child in Delos."

fever, or what could induce him to suppose it was extinct; but the following curious questions are not to be omitted. They will serve as a full sample of their author's knowledge, and justify the leaving him, for something more relative to our subject.

" ' Quelles ont été ses causes qui probablement n'ont été que passageres? Quelles ont été celles de son extinction? Les causes de cette maladie existoient-elles dans le pays? Se rencontroient-elles dans les bâtimens? Ou étoit-ce dans l'atmosphère qu'on traversoit dans la route?'

" In the endemial causus of the West Indies, some of those symptoms which have given names to the disease, are now but seldom seen, unless when the patient has applied for advice too late, or where improper advice has been unfortunately pursued: nor did I ever see, or hear of an instance, which Lind supposes may happen, that the 'black vomit may attack a man, when newly arrived there, without any previous complaint;' nor of this disease coming on with 'an uneasy itching sensation commonly in the legs, and upon pulling down the stockings, streams of thin dissolved blood followed, a ghastly yellow colour quickly diffused itself over the whole body,' &c. The former, unquestionably, is a symptom of the endemial causus, though not at the period of it Lind suggests; but the latter is no symptom of this disease, nor, I believe, of any other.

" That the black vomiting appears earlier in some cases than in others, is certain; and the earlier it appears, the greater certainty there is in the prognostic of immediate death*.

" From the various names given to this disease, improperly taken from its ultimate, and not from its primary symptoms, many difficulties have arisen to young practitioners, and to strangers in the West Indies: and this confusion of terms has often been productive of fatal consequences in practice.

" Towne calls it, febris ardens bilioſa; Warren, a malignant fever; and Hillary, a putrid bilious fever."

After noticing the contests which agitated these gentlemen respecting the propriety of terming it bilious, Dr. Moseley thinks he may venture to assert, that neither of them had been able to decide whether bile is the cause or the consequence of the disease in question. He then proceeds to observe on the eventual importance of giving true and appropriate names to diseases of so fatal a description. He says,

" It is my opinion, that the importance of the name of this fever has not been sufficiently considered; and Hillary, though

* Quibuscunque morbis incipientibus, si bilis atra sursum, aut deorsum prodeat, lethale. Hippocrat. Aphor. 22. Sect. 4.

he diſapproves of the appellation which ſome have given to it, evades the ſubject himſelf, as a diſpute only about words.

"I own I differ from him widely; for among the miſchiefs which attend miſnaming this fever, or giving it a name that conveys no idea of its firſt appearance, a ſtranger will not know what diſeaſe it is when he ſee it—until accompanied by its fatal attendants, a yellow ſkin and black vomiting.

"If this diſeaſe be called a malignant fever, the idea which is annexed to a malignant diſorder, will influence the treatment of it; ſuch practice as is neceſſary in an inflammatory diſeaſe, will never be thought of here, and the ſame miſtakes will be committed by others, as were committed by Warren; who, from thinking it not only malignant but peſtilential and contagious, inſtead of bleeding, and purging, on which, in the beginning, the cure ſolely depends, he began by covering the patient up, and ſtifling him with bed-clothes, and alexipharmics, which muſt, as Hughes obſerves, 'have very often failed.'

"If it be denominated a putrid bilious fever, what perſon in treating a putrid fever would think of large and repeated bleeding in the beginning?—If it were a putrid bilious fever, ſuch practice would certainly be improper; therefore, ſurely this term alſo muſt have an injurious tendency.

"I have uſed the word yellow in compliance with cuſtom; but I even diſtruſt that name: as the inexperienced may be looking out for that appearance, and not find, until it is too late, the diſeaſe he has to contend with. Indeed the yellowneſs of the ſkin, like the black vomiting, is not an invariable ſymptom of this fever;—thoſe who are fortunate enough to recover, ſeldom have it; and many die without its appearance. Beſides, the yellowneſs alone, leads to nothing certain; it may ariſe from an inoffenſive ſuffuſion of bile, as well as from a gangrenous ſtate of the blood."

With theſe ſentiments we find Dr. Fowle, who has lately written a treatiſe on fevers in the Weſt Indies, coincides.

"Very early after my arrival in the country," ſays Dr. Fowle, "I obſerved that perſons attacked with fever, in almoſt any ſituation, very generally became yellow. This ſoon led me to conceive it merely a concomitant ſymptom, and by no means ſuch as could be ſufficiently characteriſtic of any one fever, to give it a particular denomination; it alſo led me to diſcover the cauſe of the variety of ſymptoms attributed by different authors to the yellow fever, and to account for ſucceſsful methods of cure which were often diametrically oppoſite to each other. The longer I remained in the country, the more I was convinced of the danger attendant on giving a name to one diſeaſe from a ſymptom common to ſo many."

Dr. Moſeley very properly obſerves, that the term we ſhould

uſe to denote a diſeaſe "*ſhould agree with ſome circumſtances that characterize its attack, or firſt appearance.*" The circumſtances which characterize this, he ſays, agree with no fever, but the cauſus; nor is this diſeaſe any more entitled to the name of *putrid*, than the ſmall-pox, or any other acute diſeaſe; which may, after it has paſſed its inflammatory period, terminate with putrid ſymptoms.

"The truth is," ſays Dr. Moſeley "that this diſeaſe is in the higheſt degree poſſible, an *inflammatory* one; accompanied with ſuch ſymptoms, in a greater extent, as attend all inflammatory fever, and moſt ſtrikingly the reverſe of any diſeaſe that is putrid, or of one continued exacerbation*. It obeys no particular ſeaſon of the year; and attacks alſo ſuch people, and under ſuch circumſtances, as are ſeldom the objects of putrid diſeaſes.

"In the hiſtory of this fever, a multitude beſides thoſe whom I have named, have tried their ſtrength, in vain; having done nothing more than copy thoſe originals: with the addition, perhaps, of ſome trifling medicine, or unimportant obſervation. But the ſymptoms have always been better deſcribed, than the diſeaſe has been treated."

The author concludes what appears to belong to the account of the origin and name of this fatal malady, by obſerving, that an attentive practitioner may deſcribe a diſeaſe, though he may not known how to treat it properly; for though there can be but one way that is juſt, in deſcribing a diſeaſe, conformably to the uniformity of nature's laws, yet there may be ſeveral ways of curing it; which nature herſelf adopts, and yet does not purſue without deviation.

It is poſſible many of our readers may not implicitly adopt theſe ſentiments of Dr. Moſeley, however judicious; nor may it be an eaſy taſk for us to remark in a ſatisfactory way on a diſeaſe concerning which ſo much difference of opinion has exiſted amongſt medical men: we therefore ſimply ſtate what have been the doctrines and practice of the beſt writers, even of thoſe which ſome may conſider obſolete, becauſe not exactly in uniſon with recent ſyſtems, and leave the reader to form his own concluſions.

2. *Deſcription.*] This is one of the moſt fatal diſeaſes to which the inhabitants of warm climates are ſubject, and is the ſame, as the generality of writers aſſert, with that called, from one of its worſt ſymptoms, the *black vomit*, which is ſo terribly deſtructive in ſome of the warm parts of America, particularly at Carthagena. The yellow or *putrid bilious* fever, as it is otherwiſe

* Differt autem febris ardens à continente putrida, eo quod hæc ex ſanguine putrefacto conflatur, et à principio uſque in finem unam habet exacerbationem." Aetius, Tetr. 2. Serm. 1. Cap. 77.

called, moſt commonly ſeizes the patient at firſt with a faintneſs, then with a ſickneſs at the ſtomach, accompanied moſtly with a giddineſs of the head; ſoon after with a ſlight chillneſs and horror (very rarely with a rigor), which ſoon is followed by a violent heat and high fever, attended with acute darting pains in the head and back. A flushing in the face, with an inflamed redneſs and a burning heat in the eyes, great anxiety and oppreſſion about the præcordia, are the pathognomonic ſigns of the diſeaſe; eſpecially when attended with ſickneſs at ſtomach, violent retchings, and bilious yellow vomitings, with frequent ſighing. The pulſe is now generally very quick, high, ſoft, and ſometimes throbbing, but never hard: in ſome it is very quick, ſoft, low, and oppreſſed; the reſpiration quick, full, and ſometimes difficult; the ſkin very hot, and ſometimes dry, though more frequently moiſt. Blood taken from the patient, even at the very beginning of the diſeaſe, is often of an exceeding florid red colour; much rarefied and thin, and without the leaſt appearance of ſize; and the craſſamentum, when it has ſtood till it is cold, will ſcarce cohere, but fluctuates; the ſerum is very yellow.

Moſt of the above-mentioned ſymptoms continually increaſe, and are much aggravated: the retching and vomiting become almoſt inceſſant; the anxiety great, and ſighing frequent; great reſtleſſneſs; continual toſſing; no eaſe in any poſture; little ſleep, and that diſturbed and uneaſy, and without any refreſhment to the ſick: and when they are fainting, they turn yellow about the face and neck, inſtead of turning pale: and as the fainting goes off, they recover their natural colour. Theſe ſymptoms generally continue to the third day, though ſometimes not longer than the firſt or ſecond, in others to the end of the fourth: the firſt ſhows the greater diſſolution of the blood, and the greater malignity of the diſeaſe; the laſt, the contrary; which the improper manner of treating the diſeaſe ſometimes haſtens and increaſes, or the proper method retards. This may be called the firſt ſtadium of the diſeaſe, and generally ends on the third day.

Blood taken from the arm on the ſecond or third day, is much more diſſolved, the ſerum more yellow, and the craſſamentum florid, looſe, ſcarce cohering, but undulates like ſizy water when ſhaken, and ſometimes has dark blackiſh ſpots on its ſurface, ſhowing a ſtrong gangreneſcent diatheſis.

About the third day, the pulſe, which was quick and full before, now generally ſinks greatly, and becomes very low; though ſometimes it remains very quick, yet in others it is not much quicker than when the patient is in health, but is always low; the vomiting becomes almoſt inceſſant if not ſo before, and the matter thrown up is black; the patient then becomes comatoſe, with interrupted deliria. The thirſt in ſome is very great, in others but little; the pulſe ſtill low and quick, attended with

cold clammy ſweats, and ſometimes with deliquium. The eyes, which were inflamed and red before, and began to be of a more duſkiſh colour, now turn yellow; and this yellowneſs alſo ſoon after appears round the mouth, eyes, temples, and neck, and in a ſhort time diffuſes itſelf all over the body. But this yellowneſs is ſo far from being always an encouraging prognoſtic, as ſome would have it, that it moſt commonly proves a mortal ſymptom. Sometimes indeed, though ſeldom, this ſuffuſion of bile upon the ſurface has proved critical; but then it did not come on till the eighth or ninth day, nor appear till the coma and the other bad ſymptoms began to abate; and then in proportion as the yellowneſs increaſes, all the bad ſymptoms decreaſe. But the caſe is moſt commonly quite the reverſe; eſpecially when the yellowneſs comes ſoon on: and then it is not only ſymptomatical, but uſhers in the moſt fatal ſymptoms of the diſeaſe, viz. a deep coma, a low, vermicular, and intermitting pulſe, great hæmorrhages from various parts of the body, a delirium with laborious and interrupted reſpiration, great anxiety, deep ſighing, reſtleſſneſs, a ſubſultus tendinum, coldneſs of the extreme parts firſt, and then all over the body, a faultering of the ſpeech, tremors, and convulſions, which are ſoon after followed by death. So that from the firſt appearance of the yellowneſs we may ſay the patient is in the laſt ſtage of the diſeaſe, whether it terminates in death or recovery.

It has been obſerved, that, in ſome ſtrong ſanguine conſtitutions, when the patients have not been bled to a ſufficient quantity in the beginning of the diſeaſe, the pulſe has continued full, ſtrong, and rapid, but never hard; the face flushed, eyes inflamed; the tongue dry, with great thirſt and heat, till the ſecond or laſt ſtage of the fever is come on, when the pulſe has ſuddenly ſunk, and death ſoon after enſued. Yet in others, who ſeemed to be of a plethoric habit, the tongue has been moiſt, all along, though they have been delirious moſt of the time, and the heat of their ſkin and the ſtrength and quickneſs of their pulſe have continued, after the firſt ſtage of the diſeaſe was over, pretty near to that of their natural ſtate in health, till within a few hours of their death: and when they have had a coma on them, one who is not well acquainted with the nature of this diſeaſe would, from their pulſe, heat, breathing, and other ſymptoms, have taken them to be in a natural ſleep. Others, when the pulſe has began to ſink, and the fatal period ſeemed to be juſt approaching, to the great ſurpriſe of all preſent have recovered their ſenſes, ſat up, and talked pretty chearfully for an hour or two, and in the midſt of this ſeeming ſecurity have been ſuddenly ſeized with convulſions, which carried them off immediately.

In the latter ſtage of this fever, the blood is ſo attenuated and diſſolved, that we frequently ſee it flowing not only out of the noſe and mouth, but from the eyes, and even through the pores

of the ſkin; alſo great quantities of black, half-baked, or half-mortified blood, are frequently voided both by vomiting and by ſtool, with great quantities of yellow and blackiſh putrid bile by the ſame paſſages; and the urine, which was before of a high icteritious colour, is now almoſt black, and is frequently mixed with a conſiderable quantity of half-diſſolved blood. The pulſe, which was much ſunk before, now becomes very low, unequal, and intermitting; the breathing difficult and laborious; and the anxiety inexpreſſible: an oppreſſion with a burning heat about the præcordia come on, though the extremities are cold, and often covered with cold clammy ſweats: a conſtant delirium follows; and then a total loſs of the outward ſenſes as well as the judgment, with livid ſpots in many parts of the body, eſpecially about the præcordia; and ſometimes gangrenes in other parts of the body, which are very ſoon ſucceeded by death.

In a ſhort time after death, the body appears much more full of livid large mortified ſpots, particularly about the præcordia and hypochondres, eſpecially the right; which parts ſeem, even from the firſt ſeizure, to be the principal ſeat of this terrible diſeaſe; and, upon opening the bodies of thoſe who die of it, we generally find the gall-bladder and biliary ducts turgid, and filled with a putrid blackiſh bile; and the liver, ſtomach, and adjoining parts, full of livid or blackiſh mortified ſpots; and the whole corpſe ſoon putrifies after death, and can be kept but a few hours above ground.

Dr. Lind is of opinion, that the remarkable diſſolution of the blood, the violent hæmorrhages, black vomit, and the other ſymptoms which characterize the yellow fever, are only accidental appearances in the common fever of the Weſt-Indies; that they are to be eſteemed merely as adventitious, in the ſame manner as purple ſpots and bloody urine are in the ſmall-pox, or as an hiccough in the dyſentery: like theſe they only appear when the diſeaſe is attended with a high degree of malignity, and therefore always indicate great danger. This opinion, he thinks, is confirmed by an obſervation of Dr. Wind's, that, in 1750, the crew of a Dutch ſhip of war were diſtreſſed by the yellow fever, accompanied with the black vomit; but when the ſhip left the harbour, and changed the noxious land-air for one more healthy, the fever continued, but was not accompanied with the black vomit.

Diſeaſes ſimilar to this fever, Dr. Lind informs us, may ariſe in any part of the world where the air is intenſely hot and unwholeſome; and therefore he deems not always juſt, the notion of its being imported from one part of the world to another. An example of this happened at Cadiz in Spain, in the months of September and October, 1764, when exceſſive heat, and want of rain for ſome months, gave riſe to violent, epidemic, bilious diſorders, reſembling thoſe of the Weſt-Indies, of which one hundred perſons

often died in a day. At this time the winds blew principally from the ſouth, and after ſun-ſet there fell an unuſual and very heavy dew.

This diſeaſe began commonly with alternate ſlight chills and heats, nauſea, pains of the head, back, loins, and at the pit of the ſtomach.—Theſe ſymptoms were often followed, in leſs than twenty-four hours, with violent retchings, and vomiting of a green or yellow bile, the ſmell of which was very offenſive. Some threw up a humour as black as ink, and died ſoon after in violent convulſions and in a cold ſweat. The pulſe was ſometimes ſunk, ſometimes quick, but often varying. After the firſt day, the ſurface of the body was generally either cold, or dry and parched. The head-ach and ſtupor often ended in a furious delirium, which quickly proved fatal. The dead bodies having been examined by order of the court of Madrid, the ſtomach, meſentery, and inteſtines, were found covered with gangrenous ſpots. The orifice of the ſtomach appeared to have been greatly affected, the ſpots upon it being ulcerated. The liver and lungs ſeemed to be putrid, both from their texture and colour. The ſtomach contained a quantity of an atrabilious liquor, which, when poured on the ground, produced a ſenſible effervescence; and, when mixed with acid of vitriol, a violent ebullition enſued. The dead bodies ſo quickly turned putrid, that at the end of ſix hours their fetor was intolerable; and, in ſome of them, worms were found already lodged in the ſtomach. His Majeſty's ſhip the Tweed being at that time in Cadiz-bay, ſeveral of her men were taken ill when on ſhore, but by being carried on board all of them recovered. Neither did the black vomit, nor any other deadly ſymptom of that fever, make its appearance in any of the ſhips.

Till of late years, when we have had ſuch abundant and fatal experience of the diſeaſe in our Weſt-India Iſlands, it was a matter of much diſpute, whether the yellow fever be of an infectious nature or not. Some time ago it became an object of conſideration before the Right Hon. the Lords Commiſſioners of Trade and Plantations, where it was urged, among other reaſons, for not removing the ſeat of government and juſtice in the iſland of Jamaica from Spaniſh-town to Kingſton, that there was danger from Greenwich hoſpital, ſituated near Kingſton, of an infection from the yellow fever being frequently communicated to that town. On this ſubject a phyſician was conſulted, who had long practiſed in that iſland, and who gave it as his opinion, that from the yellow fever in that iſland there was no infection. This was the opinion not only of that gentleman, but of many others who had an opportunity of being well acquainted with this fever in Jamaica. Dr. Lind, however, gave a remarkable inſtance with which ſubſequent facts coincide, of its being of an infectious nature.—A gentleman dying at Barbadoes of a yellow fever, his wearing apparel and

linen, packed up in a cheſt, were ſent to his friends at Philadelphia; where, upon opening the cheſt, the family were taken ill; and the clothes being unluckily hung abroad to be aired, they preſently diffuſed the contagion of the yellow fever over the whole town, by which two hundred perſons died. Theſe contradictions, Dr. Lind thinks, can only be reconciled, by ſuppoſing the yellow fever in the Weſt Indies to be ſometimes of an infectious nature, and ſometimes not.

In the deſcription of the ſame fever by Dr. Lining, as it appears in South Carolina, there are ſeveral particulars conſiderably different from that by preceding writers. According to the former, people complained for a day or two before the attack, of a head-ach, pain in the loins and extremities, eſpecially in the knees and calves of the legs, loſs of appetite, debility, and ſpontaneous laſſitude. Some, however, were ſeized ſuddenly, without any ſuch previous ſymptoms. After a chillneſs and horror, with which this diſeaſe generally commences, a fever ſucceeded. The pulſe was very frequent till near the termination of the fever, and was generally full, hard, and conſequently ſtrong: in ſome, it was ſmall and hard; in others, ſoft and ſmall; but in all thoſe caſes, it frequently varied in its fullneſs and hardneſs. Towards the termination of the fever, the pulſe became ſmaller, harder, and leſs frequent. In ſome there was a remarkable throbbing in the carotids and in the hypochondria; in the latter of which it was ſometimes ſo great, that it cauſed a conſtant tremulous motion of the abdomen. The heat generally did not exceed 102 degrees of Fahrenheit's thermometer; in ſome it was leſs; it varied frequently, and was commonly nearly equal in all parts, the heat about the præcordia being ſeldom more intenſe than in the extremities when theſe were kept covered. In the firſt day of the diſeaſe, ſome had frequent returns of a ſenſe of chillineſs, though there was not any abatement of their heat. In a few, there happened ſo great a remiſſion of the heat for ſome hours, when at the ſame time the pulſe was ſoft and leſs frequent, and the ſkin ſo moiſt, that one from theſe circumſtances might reaſonably have hoped that the fever would only prove a remittent or intermittent. About the end of the ſecond day, the heat began to abate. The ſkin was ſometimes (though rarely) dry; but oftener, and indeed generally, it was moiſt, and diſpoſed to ſweat. On the firſt day, the ſweat was commonly profuſe and general; on the ſecond day, it was more moderate: but on both theſe, there happened frequent and ſhort remiſſions of the ſweatings; at which times the febrile heat increaſed, and the patient became more uneaſy. On the third day, the diſpoſition to ſweat was ſo much abated, that the ſkin was generally dry: only the forehead and backs of the hands continued moiſt. The reſpiration was by no means frequent or difficult; but was ſoon accelerated by motion, or the fatigue of drinking a cup of any liquid. The tongue

was moiſt, rough, and white, even to its tip and edges. On the ſecond day, its middle in ſome was brown. On the third day, the whiteneſs and roughneſs of the tongue began to abate. The thirſt in very few was great. A nauſea, vomiting, or frequent retchings to vomit, eſpecially after the exhibition of either medicines or food, came on generally the third day, as the fever began to leſſen; or rather as the fulneſs of the pulſe, heat, and diſpoſition to ſweat, began to abate. Some indeed, but very few, on the firſt day, had a vomiting, either bilious or phlegmatic. Very few complained of anxiety or oppreſſion about the præcordia or hypochondria, nor was there any tenſion or hardneſs about the latter. On the firſt day they generally dozed much, but were afterwards very watchful. Reſtleſſneſs and almoſt continual jactations came on the ſecond day. A great deſpondency attended the ſick, and the ſtrength was greatly proſtrated from the firſt attack. The pain in the head, loins, &c. of which they had complained before the attack, were greatly increaſed, and in ſome the pain in the forehead was very acute and darting; but thoſe pains went generally off the ſecond day. The face was flushed; and the eyes were hot, inflamed, and unable to bear much light. On the firſt day, many of them at times were a little delirious, but afterwards not until the receſs of the fever. The blood ſaved on veneſection had not any inflammatory cruſt; in warm weather, it was florid like arterial blood, and continued in one ſoft homogeneous-like maſs, without any ſeparation of the ſerum after it was cold. When there was any ſeparation, the craſſamentum was of a very lax texture. The ſtools, after the firſt day, were fetid, inclined to a black colour, and were very rarely bilious, ſoft or liquid, excepting when forced by art; for an obſtinate coſtiveneſs attended the febrile ſtate. The urine was diſcharged in a large quantity, was pale, ſometimes limpid, and rarely of a higher than a ſtraw colour, except when the weather was very warm, and then it was more ſaturated, of a deep colour, and diſcharged in ſmaller quantities. It had a large cloud, except when it was very pale or limpid; but more generally it had a copious white ſediment, even on the firſt day of the fever. On the ſecond day, the urine continued to be diſcharged very copiouſly; in ſome it was then turbid, and depoſited a more copious ſediment than on the firſt day: this ſediment was ſometimes of a browniſh colour; in which caſe it was generally followed by bloody urine, either about the end of the ſecond or beginning of the third day.—The colour and quantity of the urine, diſcharged in equal times, were remarkably variable, being now limpid, then of a deeper colour, now diſcharged in a larger, then in a ſmaller quantity; which could not be aſcribed to any change made either in the quantity or quality of the drink, &c.

The fever accompanied with thoſe ſymptoms terminated on the third day, or generally in leſs than ſeventy-two hours from the

firſt attack, not by any aſſimilation or coction and excretion of the morbid matter: for if by the latter, there would have been ſome critical diſcharge by ſweat, urine, ſtool, or otherwiſe, none of which happened; and if by the former, nothing then would have remained but great debility. This fever, however, did not terminate in either of theſe ſalutary ways, excepting in ſome, who were happy enough to have the diſeaſe conquered in the beginning by proper evacuations, and by keeping up a plentiful ſweat, till the total ſolution of the fever, by proper mild diaphoretics and diluents. But thoſe who had not that good fortune, however tranquil things might appear at this period (as great debility, and a little yellowneſs in the white of the eyes, ſeemed then to be the chief complaint, excepting when the vomiting continued), yet the face of affairs was quickly changed: for this period was ſoon ſucceeded by the ſecond *ſtadium*; a ſtate, though without any fever, much more terrible than the firſt: the ſymptoms in which were the following. The pulſe, immediately after the receſs of the fever, was very little more frequent than in health, but hard and ſmall. However, though it continued ſmall, it became ſoon afterwards ſlower and very ſoft; and this ſoftneſs of the pulſe remained as long as the pulſe could be felt. In many, in this ſtage of the diſeaſe, the pulſe gradually ſubſided, until it became ſcarce perceptible; and this notwithſtanding all the means uſed to ſupport and raiſe it; and when this was the caſe, the icteritious ſuffuſion, the vomiting, delirium, reſtleſſneſs, &c. increaſed to a great degree. In ſome, the pulſe, after being exceedingly ſmall and ſcarce perceptible, recovered conſiderably its fulneſs; but that favourable appearance was generally of but ſhort continuance. The heat did not exceed the natural animal-heat; and when the pulſe ſubſided, the ſkin became cold, and the face, breaſt, and extremities, acquired ſomewhat of a livid colour. The ſkin was dry when the weather was cold, but was moiſt and clammy when the weather was hot. The reſpiration was natural, or rather ſlow. The tongue was moiſt, and much cleaner than in the former ſtage; its tip and edges, as alſo the gums and lips, were of a more florid red colour than uſual. Very few complained of thirſt, though they had a great deſire for cold liquors. The vomiting or retching to vomit increaſed, and in ſome was ſo conſtant that neither medicines nor aliment of any kind were retained. Some vomited blood; others only what was laſt exhibited, mixed with phlegm; and others again had what is called the *black vomit**.

* That which is called the *black vomit* at firſt ſight appears to be black; but on a more careful examination, it was obſerved that this colour proceeded from a great quantity of ſmall flakey black ſubſtances which floated in the liquor thrown up by vomiting; but the colour of this liquor was much the ſame with that which the patient had laſt drank, and was by no means black. Thoſe black flakey ſubſtances are the bile mixed with, or adhering to, the mucus which lined the ſtomach. For, upon diſſection of thoſe who died of

The retching to vomit continued a longer or ſhorter time, according to the ſtate of the pulſe; for as that became fuller, and the heat greater, the retching to vomit abated, and *è contra*. The inquietude was very obſtinate; and when they dozed, their ſlumbers were but ſhort and unrefreſhing. There were ſome who were drowſy; but theſe always awaked, after the ſhorteſt ſlumbers, with a great dejection of ſpirits and ſtrength. The jactations or reſtleſſneſs were ſurpriſing: it was frequently ſcarce poſſible to keep the patients in bed; though at the ſame time, they did not complain of any anxiety or uneaſineſs; but if aſked how they did, the reply was, *Very well.* The debility was ſo great, that, if the patient was raiſed erect in the bed, or, in ſome, if the head was only raiſed from the pillow, while a cup of drink was given, the pulſe ſunk immediately, and became ſometimes ſo ſmall, that it could ſcarce be felt; at this time, they became cold, as in a horripilatio, but without the anſerine ſkin: their lips and ſkin, eſpecially about the neck, face, and extremities, together with their nails, acquired a livid colour. The delirium returned and increaſed; it was generally conſtant in thoſe whoſe pulſe was ſmall and ſubſiding. The inflammation of the tunica conjunctiva or white of the eyes increaſed much, but without pain. A yellowneſs in the white of the eyes, if it did not appear before in the febrile ſtate, became now very obſervable, and that icteritious colour was ſoon diffuſed over the whole ſurface of the body, and was continually acquiring a deeper ſaffron-like colour. In ſome indeed no yellowneſs was obſervable, excepting in the white of the eyes, until a little before death, when it increaſed very quickly, eſpecially about the breaſt and neck. There were many ſmall ſpecks, not raiſed above the ſkin, which appeared very thick in the breaſt and neck, but leſs ſo in the extremities, and were of a ſcarlet, purple, or livid colour. In women the menſtrua flowed, and ſometimes exceſſively, though not at their regular periods.

There was ſuch a putrid diſſolution of the blood in this ſtadium of the diſeaſe, that, beſides the vomiting of blood formerly mentioned, and the bloody urine ſoon to be taken notice of, there were hæmorrhagies from the noſe, mouth, ears, eyes, and from the parts which were bliſtered with cantharides. Nay, in the year 1739 and 1745, there were one or two inſtances of an hæmor-

this diſeaſe, it was always obſerved that the mucus of the ſtomach was abraded, and the bile in its cyſtis was black and ſometimes very viſcid. In a lad who died of this diſeaſe in the beginning of the fourth day, and who was immediately opened, the bile was not only black, but had the conſiſtence of thick venice-turpentine, and was exceedingly tough. On the inſide of the ſtomach, there were ſeveral carbuncles or gangrenous ſpecks. And in all thoſe who were diſſected, and had died of this diſeaſe, the ſame appearances were not only always obſerved, but likewiſe the blood was very fluid, and the veſſels of the viſcera were much diſtended.

rhagy from the ſkin, without any apparent puncture or loſs of any part of the ſcarf-ſkin.

An obſtinate coſtiveneſs continued in ſome; in others, the ſtools were frequent and looſe; in ſome they were black, liquid, large, and greatly fatiguing; in others, when the ſtools were moderate, even though they were black, they gave great relief; in others, again, the ſtools nearly reſembled tar in ſmoothneſs, tenacity, colour, and conſiſtence.

The urine was diſcharged in a large quantity, in proportion to the drink retained by the patient: it was pale if the patient was not yellow; but if yellow, then it was of a deep ſaffron-colour: in either caſe, it had a ſediment, or at leaſt a large cloud which remained at the bottom of the glaſs: in ſome, it was very turbid; in others it was bloody: and the quantity of blood diſcharged with the urine bore always ſome proportion to the ſtate of the pulſe; when that became fuller, the quantity of blood in the urine was diminiſhed; when the pulſe ſubſided, the bloody urine increaſed, and even returned after it had ceaſed ſome days, ſoon after the pulſe became ſmaller. This ſtage of the diſeaſe continued ſometimes ſeven or eight days before the patient died.

When this ſtadium of the diſeaſe terminated in health, it was by a receſs or abatement of the vomiting, hæmorrhagies, delirium, inquietude, jactations, and icteritious-like ſuffuſion of the ſkin and white of the eyes; while, at the ſame time, the pulſe became fuller, and the patient gained ſtrength, which, after this diſeaſe, was very ſlowly. But when it terminated in death, thoſe ſymptoms not only continued, but ſooner or later increaſed in violence, and were ſucceeded with the following, which may be termed the third *ſtadium* of the diſeaſe, that quickly ended in death. The pulſe, though ſoft, became exceedingly ſmall and unequal; the extremities grew cold, clammy, and livid; the face and lips, in ſome, were flushed; in others, they were of a livid colour; the livid ſpecks increaſed ſo faſt, that in ſome the whole breaſt and neck appeared livid; the heart palpitated ſtrongly; the heat about the præcordia increaſed much; the reſpiration became difficult, with frequent ſighing; the patient now became anxious, and extremely reſtleſs; the ſweat flowed from the face, neck, and breaſt; blood flowed from the mouth, or noſe, or ears, and in ſome from all thoſe parts at once; the deglutition became difficult; the hiccoughs and ſubſultus of the tendons came on, and were frequent; the patients trifled with their fingers, and picked the naps of the bed-clothes; they grew comatous, or were conſtantly delirious. In this terrible ſtate, ſome continued eight, ten, or twelve hours before they died, even after they had been ſo long ſpeechleſs, and without any perceptible pulſation of the arteries in the wriſts; whereas, in all other acute diſeaſes, after the pulſe in the wriſts ceaſes, death fol-

lows immediately. When the diſeaſe was very acute, violent convulſions ſeized the unhappy patient, and quickly brought this ſtadium to its fatal end. After death, the livid blotches increaſed faſt, eſpecially about the face, breaſt, and neck, and the putrefaction began very early, or rather increaſed very quickly.

This was the progreſs of this terrible diſeaſe through its ſeveral ſtadia. But in hot weather, and when the ſymptoms in the firſt ſtage were very violent, it paſſed through thoſe ſtages with ſuch precipitation that there was but little opportunity of diſtinguiſhing its different ſtadia, the whole tragedy having been finiſhed in leſs than forty-eight hours. It was remarkable, that, 1. The infection was increaſed by warm and leſſened by cold weather. 2. The ſymptoms in the ſeveral ſtadia were more or leſs violent, according to the heat or coolneſs of the weather. In hot days, the ſymptoms were not only more violent, but in thoſe who ſeemed in moderate weather to be on the recovery, or at leaſt in no danger, the ſymptoms were all ſo greatly heightened, when the weather grew conſiderably warmer, as frequently to become fatal. In cool days, the ſymptoms were not only milder, but many who were apparently in great danger in hot days, were ſaved from the very jaws of death by the weather becoming happily cooler. 3. The diſeaſe was generally more fatal to thoſe who lay in ſmall chambers not conveniently ſituated for the admiſſion of freſh air, to thoſe of an athletic and full habit, to ſtrangers who were natives of a cold climate, to thoſe who had the greateſt dread of it, and to thoſe who before the attack of the diſeaſe had overheated themſelves by exerciſe in the ſun, or by exceſſive drinking of ſtrong liquors, either of which indeed ſeemed to render the body more ſuſceptible of the infection. Laſtly, the diſeaſe proved moſt certainly fatal to valetudinarians, or to thoſe who had been weakened by any previous diſeaſe.

Although from the deſcription which has now been given of the yellow fever, it may appear to be in many particulars very different from the remittent fever of warm climates; yet it is the opinion of many late writers of great accuracy, particularly of Dr. John Hunter in his Obſervations on the Diſeaſes of the Army in Jamaica, that it is to be conſidered only as a more dangerous form of the ſame diſeaſe. And there can be no doubt that the remittent fever not only appears in different ſeaſons and ſituations with very different degrees of ſeverity; but alſo that while the remittent fever prevails in its uſual form in the Weſt-India iſlands, ſome individuals, particularly thoſe who are newly arrived, will be affected with very remarkable yellowneſs, as well as bilious and black vomitings.

The following deſcription of this diſeaſe, as it appeared at the Havannah in the ſummer of 1794, is given by Mr. Halliday, a reſident practitioner there.

"The symptoms of the disorder were various, and in some, it terminated life in twenty-four hours from the first attack, and with others, it endured until the tenth day. The characteristic symptoms of the disease, as it shewed itself in this city, were as follows: The day preceding its attack, the patient commonly feels a heaviness, weariness, a general debility in the whole body, yawning, and want of appetite; the day following, or on the night of the first indisposition, the violence of the disorder begins thus: the patient will be found perplexed, uneasy, generally with slight pains in different parts of the body, particularly in the head, loins, &c. accompanied with a small chilliness in the extremities (although there were many who did not feel this), attributing this to a slight cold, until unexpectedly he is seized with a severe degree of fever, with a great heat all over the body, a flushing in the face, heaviness and redness in the eyes, and a longing after fresh air, the tongue white, and excessive thirst, interior pains of the head, &c. the pulse quick, full, and hard, at times feeble and irregular, a nausea, heaviness, and an uneasy sensation in the stomach, from the beginning, and the whole increasing with the disorder, particularly after taking something to quench the thirst; the anxiety and uneasiness then increased, with vomiting a great abundance of bilious matter, the skin hot and dry, intense heat, with pain in the region of the præcordia, the respiration difficult, and the urine high coloured and little in quantity; the symptoms continued twenty-four or forty-eight hours, and at times I have seen them endure till the third or fourth day, differing in some of the symptoms, together with the times of its duration, according to the age, constitution, or malignity with which it had increased: when in the midst of these complicated and violent symptoms, there was an apparent cessation, and total relief from them, a slight perturbation and inclination to sleep only remaining.

"From such favourable appearances, we prognosticated we had gained the desired crisis, and a total intermission of the disease; but, to the misfortune of the unhappy patient, at this time (by a minute examination) we observed on the white of his eyes a slight yellowish tinge, and successively on every other part of the body, accompanied with a perturbation of the intellectual functions, a glossy appearance of the eyes, the anxiousness and vomiting were augmented in such a manner, that they impeded the administration of nourishment or medicine: at this time, instead of experiencing that irresistible and burning heat which was before complained of, the patient feels chilly, and the cutis is alternately dry and moist, the pulse sinking, and very irregular, the urine of an high croceous appearance, and at times resembling liquid and corrupted blood, depositing, as I have often seen, a black and offensive sediment: the tongue is, in some, dry, parched, and discoloured; and in others, it is furred and moist. This stage of the disorder

laſted but a few hours in ſome, and in others, from twenty-four to forty-eight, but ſeldom longer; and it is in this ſecond ſtage when the medicines have not produced the deſired effects, the beginning of the diſorder neglected or improperly treated, when we ſee the direful efforts made between life and death, the pulſe diminiſhing, more irregular or intermittent, nothing can be kept on the ſtomach, the vomiting increaſes with repeated efforts, voiding a black corrupted matter, ſimilar to the grounds of coffee, the tongue and edges of the lips black and ſticking, cold clammy ſweats; the univerſal yellowneſs, together with the aggravation of all the ſymptoms, are demonſtrative of the near approach of death: a total ſuppreſſion of the urine, *ſubſultus tendinum*, a death-like coldneſs of the extremities, tremblings, delirium, efforts of getting up from bed, a muttering voice, blood oozing from the mouth, noſtrils, and many times from the corners of the eyes, ears, &c. black and fœtid ſtools, livid ſpots on different parts of the body, particularly on the regions of the præcordia; hiccups, coma, and death."

2. *Cauſes of, and perſons ſubject to, this diſeaſe.*] The yellow fever attacks principally Europeans, eſpecially thoſe who have but lately arrived in the hot climates. Negroes are entirely exempt from it, though the mulattoes and tawnies are as liable to be ſeized with it as the whites themſelves. The cauſe of the diſeaſe ſeems to be a particular kind of contagion; but Dr. Lind ſeems to be of opinion, that the immediate cauſe of the ſymptoms is a diſpoſition in the glutinous part of the blood to ſeparate from the others, and to become purulent. In ſome perſons who have been bled in the yellow fever, the blood hath been obſerved prodigiouſly viſcid; the craſſamentum covered with a yellow gluten half an inch in thickneſs, and impenetrable to the finger unleſs cut by the nail; the ſerum being at the ſame time of the conſiſtence of a thin ſyrup, and of a deep yellow tinge. This ſerum taſted bitter, and was taken for a compoſition of ſoot. The appearances on diſſection, with his concluſions from them, we ſhall give in his own words: 'In a man who died on the eleventh day of a yellow fever, whoſe body emitted no bad ſmell thirty-ſix hours after death, and was ſtill yellow, I found all the bowels of the abdomen ſound; the liver and ſpleen were remarkably ſo; as alſo the ſtomach and inteſtines. There was no ſuffuſion of the bile either in the inteſtines or ſtomach. The gall-bladder, of the natural ſize, contained the uſual quantity of bile, ſomewhat thicker than common, and grumous.'

"Upon examining further, this diſeaſe was found to have lain wholly on the left ſide, where, within the breaſt, was found near a quart of yellowiſh water, in which were many large flakes of yellowiſh gluten, appearing, by compariſon, preciſely the ſame with the thick pellicle which had covered the blood taken from his arm. Theſe flakes bore in ſeveral places a reſemblance to a membranous ſubſtance beginning to be converted into a purulent jelly. The

pleura, both on its inside and outside, as also its continuation, the investing membrane of the lungs (which in some parts was greatly thickened), were covered with cakes of this gluten, hanging in some places loosely, in others adhering more strongly: and all in different states of yellow or purulent corruption. The right cavity of the breast, and all the other parts of his body, were found entirely free from disease.

"His complaints had been chiefly in his breast; and a small quantity of blood taken from him two days before his death, was covered with an impenetrable, yellow, thick gluten; the red portion below it being quite loose.

"In those fevers, I have also seen the disease entirely confined to the heart and pericardium. In one who died the tenth day of the fever, without having been yellow, a quantity of pus and purulent crusts were found mixed with the water of the pericardium. The heart in different places was excoriated; and, together with the inside of the pericardium, was lined with a thick membranous cake, similar to that already mentioned on the lungs and pleura. In some places this cake had a purulent, in others a gelatinous, appearance, exactly resembling the coagulum of the blood. His complaints had been, a great oppression on the breast, and an extreme difficulty of breathing. In a third person, who died on the thirteenth day of the fever, above two quarts of pus and purulent jelly were found in the cavity of the belly. The source of such an extraordinary quantity of matter was not from any preceding inflammation, nor any imposthume, that we could discover; but from innumerable ulcerations on the surface of the intestines, omentum, mesentery, and peritoneum. Neither did those ulcerations (or excoriations, as they rather appeared in several places) seem to be the primary fountains of the matter, but to have been occasioned by its acrimony.

"This purulent appearance seems to arise merely from an extravasation of one of the component parts of the blood, the gluten or coagulable lymph. Blood taken from persons in a fever, and frequently even from persons in perfect health, after standing in a clean vessel for a short time, commonly separates into three distinct portions: *viz.* the serum, or water of the blood, the red concreted mass, and a viscid pellicle termed the *size*, which spreads itself on the top of the red concretion. Some time ago, when making experiments with the blood taken from persons in the scurvy, I was surprised to find it often covered with that sizy crust. This induced me to extend my experiments to large quantities of blood from different subjects, which I had opportunities of inspecting at once in so large an hospital. For this purpose I one morning ordered ten patients in the scurvy to be bled, taking two ounces from each. A larger quantity was taken, for its inspection, from two men in health. That day I had occasion to prescribe bleeding to a wo-

man in labour, two hours before her delivery; to a girl of ſixteen years of age, afflicted with a lunacy proceeding from the chloroſis; to three patients in the rheumatiſm; and to a perſon labouring under an obſtruction of the liver.

"From a nice compariſon, and an examination of the different blood, I found, in general, that the more ſize there was on the top, and the thicker and more viſcid this white pellicle ſhowed itſelf, the concretion below it was of a more looſe coherence. This was not ſo obſervable when only ſome ſlight white ſtreaks appeared on the top. But when much ſize had ſeparated itſelf, the red maſs became very ſoft at the bottom of the veſſel, and leſs compact in its different parts, in proportion to their diſtance from the ſurface, towards which this whitiſh portion had aſcended.

"From this and from other experiments it appears, that this cruſt or pellicle is the natural gluten or cement of the blood (called by ſome the *coagulable lymph*), which becomes ſtrongly diſpoſed, in certain circumſtances and diſeaſes, to ſeparate itſelf. And whereas the ſerum and red concretion are eaſily incorporated together, it will be found, that this glue, after its ſeparation, becomes immiſcible with either. We have, by gentle drying, ſometimes converted it into a perfectly tough elaſtic membrane; and, by the means of a ſmall portion of the red maſs being left adhering to it, into a ſuſtance reſembling muſcular fleſh; and it is capable of undergoing various changes into corruption, in the ſame manner as either of theſe.

"Now, I can ſee no reaſon why this gluten, in its morbid ſtate, may not ſeparate itſelf from the circulating blood, and be depoſited in the cavities of the body, as readily as the ſerum does in dropſies; the former having always a leſs diſpoſition than the latter to incorporate with the maſs.

"In diſſecting perſons who died of fevers in London and Minorca, and where no infection was ſuſpected, appearances ſimilar to theſe have alſo fallen under the inſpection of thoſe accurate anatomiſts Drs. Hunter and Cleghorn. Hence it may be preſumed very difficult to diſtinguiſh fevers that are produced by infection, from ſome others. I cannot, however, be induced to think, as thoſe gentlemen ſeem to do, that theſe preternatural ſubſtances which were found in the cavities of the body are the conſequence, but rather that they are the cauſe of the inflammation and excoriations. I believe theſe ſubſtances to be at firſt diſeaſed extravaſated gluten, and conjecture their different ſtates greatly to depend upon the different times at which they were depoſited.

"I have remarked, in a variety of dead bodies, three different kinds of extravaſation; theſe occurred in ſuch as had died of the ſcurvy, of conſumption, and of fevers. In the former of thoſe diſeaſes, red coagulated blood is found extravaſated in almoſt all parts of the body, not only into the tela celluloſa, but into the bellies

of the muſcles, particularly of the legs and thighs, which often become quite ſtuffed and even diſtorted with large grumous maſſes. The inteſtines and meſentery are often ſpotted alſo with extravaſated blood; and I have ſeen large ecchymoſes on the ſtomach. Thoſe appearances at firſt ſight reſembled ſo many diſtinct mortifications; and by this appearance ſome anatomiſts have been deceived; but upon a nice examination, the texture of the parts is found to be ſound and firm. There is likewiſe, in that diſeaſe, ſometimes, an extravaſation of water chiefly collected in, and always when in the legs confined to, the tela celluloſa.

"But whereas, in the limbs of ſcorbutic perſons, it is extremely difficult to make a good diſſection by reaſon of ſuch quantities of extravaſated blood that every-where obſtruct the operator; ſo, on the contrary, the lower extremities of thoſe who have died conſumptive, with ſwelled legs, are, of all other ſubjects, in the beſt ſtate to afford a ſatisfactory view of the muſcles. The water incloſed in their legs having inſinuated itſelf, by paſſing the tela celluloſa, into the ſpaces between the muſcles, are eaſily ſeparated from each other; and their ſeveral origins and inſertions may be diſtinctly traced by means of their having been cleanſed and waſhed by the water in the inveſting cellular membrane. Thus there are extravaſations of three ſorts; *viz.* firſt, the grumous maſs in the ſcurvy; and this I have often remarked where no ſerum was obſerved. Secondly, the ſerum alone in anaſarcous ſwellings. The third and laſt is what was taken notice of in thoſe who died of fevers, being the gluten of the blood, accompanied for the moſt part with ſome ſerum; both of them altogether confined in the large cavities of the body.

"I conjecture, that in thoſe fevers there is always an ulcerous or purulent diſpoſition in the blood; and that this gluten or coagulable lymph is greatly diſeaſed. I have frequently ſeen it have a true purulent appearance ſoon after it was drawn off, when the patient ſeemed not very ill.

"And I further conjecture, that the miſchief often lies within the breaſt; as alſo that the great benefit derived from the very early application of bliſters, in a great meaſure, flows from ſo many ulcerations and vents being timely provided for the free diſcharge of thoſe purulent and tainted particles from the body.

"If an infection depends, as many have imagined, on the admiſſion of certain foreign particles into the blood, this gluten ſeems to be its more immediate ſeat, and to be primarily affected by it; and a diſcharge of this, as though by waſhing thoſe particles out of the body, tends in a great meaſure to remove the diſeaſe.

"It is an obſervation of the beſt practical writers, that iſſues and ſetons are moſt excellent preſervatives againſt receiving an infection, nay, even that of the plague itſelf. And indeed a ſuppu-

ration and plentiful discharge from a proper ulcer, whether produced by nature or by art, seems to open a channel the best appropriated for an exit out of the body to some of the most malignant poisons. Thus the most favourable crisis in the plague, and in most pestilential fevers, happens when nature excites tumors kindly suppurating in the groin or arm-pits."

We here protest against the *humoral* pathology: but the author proceeds,

"I have observed it to be among the most certain characteristics of the worst fevers, that the blisters either do not rise and fill, or discharge such yellow, greenish, fetid, and highly offensive stuff, that even experienced nurses could give a pretty certain conjecture from the blisters, of the different degrees of malignity in the fever. We have more than once endeavoured to conceal the bad state of some patients in the hospital; but a discovery was always made of their condition in the wash-house, from the linen sent there stained with the discharges from the blistered parts. And indeed a careful inspection of the state and discharge from the blisters, together with their effects, furnishes us, in those diseases, with some of the most certain diagnostics of their nature and prognostics of their event."

Dr. Rush of Philadelphia thus describes this fever, as it appeared in that city in 1793.

"There were for several weeks two sources of infection, viz. exhalation, and contagion. The exhalation infected at the distance of three and four hundred yards; while the contagion infected only across the streets. The more narrow the street, the more certainly the contagion infected. Few escaped it in alleys. After the 12th of September, the atmosphere of every street in the city was loaded with contagion; and there were few citizens, in apparent good health, who did not exhibit one or more of the following marks of its presence in their bodies. 1. A yellowness in the eyes, and a sallow colour upon the skin. 2. A preternatural quickness in the pulse. I found but two exceptions to this remark, out of a great number of persons whose pulses I examined. In one of them it discovered several preternatural intermissions in the course of a minute. This quickness of pulse occurred in the negroes, as well as in the white people. I met with it in a woman who had had the yellow fever in 1762. In two women, and in one man above seventy, the pulse beat upwards of ninety strokes in a minute. This preternatural state of the pulse during the prevalence of a pestilental fever in persons in health, is taken notice of by Riverius *. 3. Frequent and copious discharges by the skin of yellow sweats. In persons who were much exposed to the con-

* "Pulsus sanorum pulsibus similes admodum, periculosi."
De Febre Pestilenti, p. 114.

tagion, theſe ſweats ſometimes have an offenſive ſmell, reſembling that of the waſhings of a gun. 4. A ſcanty diſcharge of high-coloured or turbid urine. 5. A deficiency of appetite, or a greater degree of it than was natural. 6. Coſtiveneſs. 7. Wakefulneſs. 8. Head-ach. 9. A preternatural dilatation of the pupils.—This was univerſal. I was much ſtruck in obſerving the pupil in one of the eyes of a young man who called upon me for advice, to be of an oblong figure. Whether it was natural, or the effect of the contagion acting on his brain, I could not determine.

"It will be thought leſs ſtrange, that the contagion ſhould produce thoſe changes in the ſyſtems of perſons who reſided conſtantly in the city, when I add, that many country people who ſpent but a few hours in the ſtreets in the day, in attending the markets, caught the diſeaſe, and ſickened and died after they returned home; and that others, whom buſineſs compelled to ſpend a day or two in the city during the prevalence of the fever, but who eſcaped an attack of it, declared that they were indiſpoſed during the whole time with languor, or head-ach."

After rejecting the general opinion that this diſeaſe could only be had once by the ſame perſon, Dr. Ruſh tranſcribes from a paper by Drs. Phyſick and Catherall the following account of the appearances after death.

Theſe gentlemen ſtate, "1ſt. That the brain in all its parts has been found in its natural condition. 2d. That the viſcera of the thorax are perfectly ſound. The blood, however, in the heart and veins is fluid, ſimilar in its conſiſtence to the blood of perſons who have been hanged, or deſtroyed by electricity. 3. That the ſtomach, and beginning of the duodenum, are the parts that appear moſt diſeaſed. In two perſons who died of the diſeaſe on the 5th day, the villous membrane of the ſtomach, eſpecially about its ſmaller end, was found highly inflamed; and this inflammation extended through the pylorus into the duodenum, ſome way.—The inflammation here was exactly ſimilar to that induced into the ſtomach by acrid poiſons, as by arſenic, which we have once had an opportunity of ſeeing in a perſon deſtroyed by it.

"The bile in the gall-bladder was quite of its natural colour, though very viſcid.

"In another perſon who died on the eighth day of the diſeaſe, ſeveral ſpots of extravaſation were diſcovered between the membranes, particularly about the ſmaller end of the ſtomach, the inflammation of which had conſiderably abated. Pus was ſeen in the beginning of the duodenum, and the villous membrane at this part was thickened.

"In two other perſons who died at a more advanced period of the diſeaſe, the ſtomach appeared ſpotted in many places with extravaſations, and the inflammation diſappeared. It contained, as

did alſo the inteſtines, a black liquor, which had been vomited and purged before death. This black liquor appears clearly to be an altered ſecretion from the liver; for a fluid in all reſpects of the ſame qualities was found in the gall-bladder. This liquor was ſo acrid, that it induced conſiderable inflammation and ſwelling on the operator's hands, which remained ſome days. The villous membrane of the inteſtines in theſe laſt two bodies was found inflamed in ſeveral places.

"The liver was of its natural appearance, excepting in one of the laſt perſons, on the ſurface of which a very few diſtended veins were ſeen: all the other abdominal viſcera were of a healthy appearance.

"The external ſurface of the ſtomach, as well as of the inteſtines, was quite free from inflammation; the veins diſtended with blood, which appeared through the tranſparent peritoneum, gave them a dark colour.

"The ſtomach of thoſe who died early in the diſeaſe was always contracted; but in thoſe who died at a more advanced period of it, where extravaſations appeared, it was diſtended with air."

A violent difference of opinion having exiſted amongſt the phyſicians in that quarter of the world, as to the method of treatment which ought to be purſued; and that appearing to Dr. Ruſh to have ariſen from their having confounded the diagnoſtics of this, with thoſe of other fevers, particularly the gaol, or hoſpital fever, he points out the following diſcriminating ſigns.

"The circumſtances and ſymptoms in which the gaol fever *differs* from the yellow fever, are as follow: 1. It affects perſons who have been previouſly weakened by other diſeaſes, or who are of weakly habits. 2. The pulſe is ſeldom full or tenſe, but generally weak and quick. 3. The tongue ſoon loſes its whiteneſs and moiſture, and aſſumes when dry a dark colour. 4. The ſtomach is ſeldom diſordered. The bowels are either in their natural ſtate, or a diarrhœa attends. The ſtools are ſeldom bilious, or preternaturally fœtid. 5. There are great twitchings in the tendons, and tremors in the tongue and limbs. 6. Intermiſſions and remiſſions of the fever are ſeldom, or ſcarcely perceptible. 7. It prevails alike in the winter, ſpring, and autumn. It is moderated, or checked, by warm weather, provided patients are placed in ſituations in which they can breathe a ſufficient quantity of freſh air. 8. It is leſs contagious and mortal than the yellow fever. 9. It is derived from human miaſmata produced under inferior degrees of all thoſe circumſtances which favour the generation of the plague. It is to the plague, in its degree, what the common bilious is to the yellow fever.

"There is a camp fever deſcribed by ſome authors, which is

derived from a mixture of marſh and human miaſmata. Its ſymptoms are compounded of thoſe which belong to the bilious, and gaol fevers."

"I ſhall not attempt (continues Dr. Ruſh) to diſtinguiſh the *yellow* from the *common bilious* fever. They are only different grades of the ſame diſeaſe. The following appears to be the natural order of a ſcale of ſuch fevers as are derived from marſh miaſmata. 1. The yellow fever. 2. The common bilious remitting fever. 3. The common mild intermitting fever. 4. The febricula of authors, or what are called 'inward fevers' in the ſouthern ſtates. Different degrees of *force* in the remote cauſe, in conjunction with a difference in the qualities of the atmoſphere, frequently produce all thoſe grades of bilious or marſh fever in different ſeaſons, and ſometimes in the ſame ſeaſon. The increaſe, or abſtraction of accidental ſtimuli, likewiſe often change theſe different ſtates of bilious fever into each other. Thus, what are called inward fevers have often been excited by means of a ride, or a long walk, into an intermittent; an intermittent has been changed by the premature uſe of the bark into a remitting fever, and a common remittent has, by improper regimen or violent exerciſe, been excited into a yellow fever. The danger in each caſe is determined by the force of the miaſmata, and the ſtate of the air."

Many of the circumſtances here ſtated, will be found to agree with the deſcription of this diſeaſe by Dr. Moſeley, who introduces that part of his ſubject by obſerving, that, people from colder climates, North-Americans and Europeans, on their arrival in the Weſt Indies, are ſubject to what is called a *ſeaſoning*. This ſeaſoning is underſtood to be the firſt illneſs they are attacked with; which, unleſs they live very temperately, or are in a proper habit of body, though ſome people are unmoleſted for many months, ſeldom ſuffers them to remain long before it makes its appearance, in ſome mode or other; particularly if, at firſt, they expoſe themſelves in a ſhower of rain, or too long in the ſun, or in the night-air; or when the body is much heated, if they drink large draughts of cold liquors, or bathe in cold water; or uſe much exerciſe; or commit exceſs in drinking wine or ſpirits; or by heating the body and inflaming the blood; or by ſubjecting themſelves to any cauſe, that may ſuddenly check perſpiration, which at firſt is generally exceſſive.

"Some people," Dr. Moſeley obſerves, "from a favourable ſtate of body, have *no ſeaſoning*. Thin people, and very young people, are moſt likely to eſcape it. Women generally do from their temperance, and perhaps their menſtruation contributes to their ſecurity; indeed hot climates are favourable to the delicacy of their habits, and ſuitable to their modes of life. Some eſcape by great regularity of living; ſome, by the breaking out of the

raſh, called the *prickly heat*; ſome by a great degree of perſpiration; and ſome by obſerving a cooling regimen.

"The diſorders are various that conſtitute this ſeaſoning of *new-comers*, as they are called; depending on age, conſtitution, and habit of body.

"But all ſeaſoning diſeaſes are of the inflammatory kind; and yield to antiphlogiſtic treatment proportioned to their violence.—In this general poſition, I do not include the derangement which may happen to habits, naturally, or from diſeaſe, at variance with hot climates.

"Subjects moſt likely to be attacked by the *Endemial Cauſus* (the yellow fever) are the florid, the groſs, the plethoric;—that ſort of ſtrong, full, youthful people with tenſe fibres, who in England (to uſe a vulgariſm) are ſaid to reſemble the picture of health. In ſhort, ſo are all perſons who are of an inflammatory diatheſis, and do not perſpire freely."

The doctor conſiders it very natural that this fever ſhould be called by the French *la Fièvre Matelotte*, and that ſailors, who eat, drink, and ſleep ſo much at ſea, and uſe no exerciſe, being always of a groſs habit of body, ſhould be attacked with it more than viſitors of tropical climates of any other deſcription. "The heat and dampneſs of harbours," ſays he, "generally in the neighbourhood of marſhes, and expoſed to land winds at nights; the labour on board of veſſels in port, lying ſtill at anchor, in the ſcorching rays of the ſun; and the careleſſneſs and exceſſes committed by people of this claſs, when they are on ſhore, after long voyages, muſt always ſubject them to the worſt evils climate can produce.

"When a new-comer is ſeized with a ſudden loſs of ſtrength, and a deſire of changing, for reſt, into every poſition, without finding it in any, thoſe ſymptoms which conſtitute the *Endemial Cauſus* may be expected. This is of great conſequence to be underſtood, and to be well remembered.

"When a new-comer is taken ill in hot climates, an intermiſſion is not to be waited for; diſeaſe muſt be ſtifled in its birth.

"Suppoſing a perſon, anſwering any of the preceding deſcriptions, juſt arrived in the Weſt Indies, were to expoſe himſelf to the cauſes already mentioned, the probable conſequences would be, that to-morrow he would perceive an heavineſs, a laſſitude, an oppreſſion, and a loſs of appetite. This is the time to extinguiſh the diſeaſe; but Europeans and North-Americans neglect it, as they are not accuſtomed at home to have recourſe to medicine, on the firſt moment of indiſpoſition.

"The following day, but ſometimes within twelve hours from the firſt indiſpoſition, the violence of the diſeaſe will commence thus:—

"There will be a faintneſs, and generally a giddineſs of the head, with a ſmall degree of chilline's and horror, but never a rigor*. Then immediately will ſucceed, an high degree of fever, with great heat, and ſtrong beating in all the arteries of the body, particularly obſervable in the carotid and temporal arteries; flushings in the face, gaſping for cool air, white tongue, but tinged with yellow, after the retchings have commenced; exceſſive thirſt, redneſs, heavineſs, and burning in the eyes; heavineſs and darting pains in the head, and ſmall of the back, and often down the thighs; pulſe quick, generally full and ſtrong; in ſome caſes quick, low, and vacillating; ſkin hot and dry, ſometimes with a partial and momentary moiſture; ſickneſs of the ſtomach, from the firſt, which increaſes with the diſeaſe, aud immediately after any thing is taken to quench the thirſt, retchings ſucceed, in which bilious matter is brought up; anxiety with ſtricture, ſoreneſs, and intenſe heat about the præcordia; great reſtleſſneſs; heavy reſpiration; ſighing; urine deep coloured, and but little in quantity. This is the firſt ſtage of the fever, and may continue twenty-four, thirty-ſix, forty-eight, or ſixty hours, and this conſtitutes its inflammatory period.

"The *ſecond ſtage* begins with an abatement of many of the preceding ſymptoms, and the riſe of others; ſometimes with a deceiving tranquillity, but with perturbation, if the patient ſhould fall into a ſleep; then a yellow tinge is obſerved in the eyes, neck, and breaſt; the heat ſubſides, and ſometimes with a chilline's; but not with that ſort of ſtrong rigor† which, when it happens, terminates the diſeaſe by ſweat, or by copious bilious evacuations, upwards or downwards. The retchings increaſe and turn poraceous; the pulſe flags, but is ſometimes high, and ſometimes ſoft; the ſkin moiſt and clammy; urine in ſmall quantity, and of a dark croceous colour; the tongue, in ſome caſes, is dry, harſh, and diſcoloured; in others it is furred and moiſt; confuſion in the head, and ſometimes delirium; with the eyes glaſſy. This ſtage of the diſeaſe ſometimes continues only for a few hours, ſometimes for twelve, twenty-four, thirty-ſix, or forty-eight hours, but ſeldom longer.

"It is in the beginning of this ſecond ſtage when attempts have failed, or have been neglected in the inflammatory ſtage, that the ſtruggle is to be made between life and death.

"In the *third* and *laſt ſtage* of the fever, the pulſe ſinks and be-

* "Cum rigore non irruit.—Neque rigor exacerbationes præcedit."
AETIUS, Tetr. 2. Serm. 1. Cap. 77.

† "Ardente febre laboranti, ſuperveniente rigore, ſolutio contingit."
HIPPOCRAT. Aphor. 58. Sect. 4.

"Febrem autem ardentem, quam Græci καυσωδη vocant, ſubitus horror exolvit."
CELSUS, Lib. II. Cap. 8.

comes unequal and intermittent, ſometimes very quick; frequent vomiting; with great ſtraining and noiſe in vomiting, and what is brought up now is more in quantity, and has the appearance of the grounds of coffee, or is of a ſlate colour; nothing can be retained in the ſtomach; difficult breathing; tongue black; cold clammy ſweats; eyes yellow, and ſunk; yellowneſs round the mouth and temples, and ſoon after over the whole body.

"This univerſal yellowneſs growing deeper coloured, accompanied by an aggravation of all the other ſymptoms, is the immediate forerunner of death. Deep reſpiration; ſubſultus tendinum; a convulſive kind of ſighing; black urine; ſometimes total ſuppreſſion of urine; death-like coldneſs of the hands, feet, and legs; heat ſtill about the pit of the ſtomach; delirium, and ſtruggling to get up in the bed; faultering ſpeech; trembling; blood oozing from the mouth and noſtrils; ſometimes from the corners of the eyes, and from the ears; vomiting black bloody cruor; ſtools the ſame; livid ſpots about the body, particularly the præcordia; hiccup; muttering; coma;—death.

"I have divided the diſeaſe into three ſtages, becauſe, between the *inflammatory* and the *gangrenous ſtate*, there is a diſtinct period of its *Metaptoſis*; a compoſure preceding mortification, as is obſerved on all other occaſions, which ſometimes gives ſufficient length of time to perform the cure; though ſometimes it is of ſo ſhort a duration, that the patient ruſhes immediately, as ſoon as the inflammatory ſtate is paſſed, into the black vomiting. Sometimes, in this period of the diſeaſe, the ſymptoms are ſo mild, and the patient ſo tranquil, that the diſeaſe is ſuppoſed at an end; and all means are neglected, or thought unneceſſary, until the ſtorm appears which ſucceeds this fatal calm, arrayed in thoſe dreadful forms I have enumerated, as characteriſtic of its third ſtage, and completes the cataſtrophe.

"The preceding deſcription correſponds with the general order and manner of the diſeaſe, when the patient dies from the third or fourth, to the ſeventh day. But many patients do not experience all the ſymptoms that I have mentioned, which vary according to habit of body; ſome inclining to characterize the *genuine*, and ſome the *ſpurious* cauſus, of the ancients. Some have no chillineſs at firſt, nor faintneſs, nor fluſhings in the face, and the pulſe is ſometimes deeply depreſſed, and not quick; and there are groſs habits of body which have been attacked in very ſultry weather, in damp ſituations, where the inflammatory period has been only of a few hours' duration; the *Metaptoſis* has been ſo rapid, that the black vomiting, and the mortified ſtate, have unexpectedly appeared, and have ended the patient in twenty-four, thirty-ſix, or forty-eight hours. On the contrary, there are ſome inſtances where the diſeaſe has been protracted to the eighth, ninth, or tenth day; and

others where it has never paſſed from the inflammatory ſtage; but being checked, though not extinguiſhed, it has been lengthened out, and at laſt converted into a remittent of great duration, of moſt difficult cure, and tedious recovery.

"During all the periods of the diſeaſe, great heat is perceived near the præcordia, and foreneſs and uneaſineſs complained of, on preſſing the hand upon thoſe regions. After death, livid ſpots appear over the whole body, particularly about the præcordia, which, as *Warren* juſtly remarks, 'ſeem from the beginning to be the chief ſeat and throne of the furious conqueror.'

Dr. Moſeley does not agree with Hillary as to the cauſe of this uniform and extreme ſuffering about the præcordia. He thinks it is not occaſioned by the parts being ſituated near to the "ſeat of the liver and gall-bladder;" and that this fact is by no means proved, though "the gall-bladder and its ducts are always found turgid with poraceous, blackiſh, and putreſcent bile;" but, on the contrary, that it ariſes principally from the particular ſtate of the ſtomach; at firſt from its being charged with hot, corroſive, and acrid contents; at length from inflammation, and from the convulſive motion of inceſſant ſtraining to vomit. "In ſhort," ſays Dr. Moſeley, "this viſcus ſeems to bear the chief burden of the diſeaſe, while life remains, and the principal internal veſtiges of its effects after death.

"At the end of the diſeaſe," continues he, "the ſtomach, in ſome part or other, is generally mortified, where the black vomiting has been protracted; and when livid ſpots have appeared on the body previous to death: for on inſpecting many dead bodies, I have always found ſome part or other of the ſtomach, and frequently the ſuperior part of the duodenum, in a gangrenous ſtate, and never without evident marks of injury from inflammation, let the diſeaſe have been of ever ſo ſhort a duration. It has been ſaid, that gangrenous ſpots have been obſerved in the inferior parts of the curvatures of a very conſiderable portion of the inteſtinal canal, but this I have never ſeen.

"Theſe appearances are univerſally produced by a mortal yellow fever; but from the appearance of the liver, and gall-bladder, though both muſt be materially affected in this diſeaſe, there is no inference to be drawn that can be depended on: though the cauſe of the diſeaſe aſſigned by GALEN, certainly favours a different concluſion*. Indeed GALEN himſelf, ſpeaking of particular ſymptoms, ſuppoſes the *Cauſus* ſometimes may have its ſeat in the ſtomach, or liver, nay even in the lungs †."

* "Oritur ex bile non nimis ſicca, circa venas quæ ad jecur ſunt." Introductio ſeu Medicus, Cap. 13.

† Propterea hæc, in *ventre* ac *hepate* cauſi veluti ſedem habentibus, accidunt. Verum in *pulmone* cauſi ſedem habentibus, hæc non admodum contingunt, &c. Com. 4. Art. 4. In Lib. Hipp. de Acut. Morb. Victu.

"In the courſe of the diſeaſe, though there are ſome ſymptoms common to inflammations of the liver, yet there are more to inflammations of the ſtomach; and none of the invariable ſymptoms which diſtinguiſh inflammations of the liver from all other diſeaſes.

"There is no heavy fixed pain in the right hypochondrium, with inflation and tenſion, and hiccup; as when the concave part of the liver is inflamed; there is no evident and painful enlargement of the ſide, with acute pain in breathing, extending up to the neck, or top of the right ſhoulder, and dry cough, as when the convex part of the liver is inflamed.

"This fever never terminates in ſuppuration of the liver, as in the *Hepatitis*; though it muſt be confeſſed it often does in an enormous excretion of bile.

"Diſſections have never diſcovered any certain and uniform appearance in the liver, of thoſe who have died of this diſeaſe.—In hot climates a ſound ſtate of the liver is never to be expected, after death, whether the diſeaſe has been acute or chronical.—Of the latter claſs of diſeaſes, it is almoſt always either the ſeat, or the origin."

3. *Prognoſis.*] This diſtemper, where it attacks with violence, is generally fatal: the prognoſis therefore muſt be commonly unfavourable, and always uncertain; neither can any thing more be ſaid on this ſubject, than that an abatement of the ſymptoms already enumerated affords a favourable prognoſtic, and an increaſe of them the contrary.

4. *Cure.*] In ſpeaking of the means to be uſed in the preventing, and cure, of the yellow fever, we ſhall follow the different authors from whom we have already quoted. Though ſo terrible in its nature, the once greatly celebrated Dr. Hillary repreſents the cure of this diſeaſe as very eaſy and ſimple. His indications are, 1. To moderate the too great and rapid motion of the fluids, and abate the too great heat and violence of the fever, in the two firſt days of the diſeaſe, as much and as ſafely as we can. 2. To evacuate and carry out of the body as much of the putrid bile and other humours, and as expeditiouſly and ſafely as poſſible. 3. To put a ſtop to the putreſcent diſpoſition of the fluids, and to prevent the gangrenes from coming on, by ſuitable antiſeptics.

The firſt indication is anſwered by bleeding, which, in the firſt ſtage of this fever, is abſolutely neceſſary in ſome degree: the quantity to be taken away muſt be nicely determined by the age and ſtrength of the patients, the degree of plethora, fulneſs of the pulſe, &c. When called in at the beginning, he orders twelve, fourteen, ſixteen, eighteen, or twenty ounces of blood to be taken away on the firſt or ſecond day; and if the patient's pulſe riſe after the firſt bleeding, or if the fever ſtill continue high and the pulſe full, he repeats the bleeding on the days above mentioned.

But bleeding a third time is seldom or never required: neither is bleeding on the third day almost ever necessary; when it is performed on that day, it ought to be done with the greatest caution and judgment; neither should a vein be opened after the third day in this fever, unless some very extraordinary symptoms and circumstances require it, which seldom or never happen. On that day, indeed, the pulse generally sinks, and the blood is in such a dissolved state, that bleeding must be accounted highly pernicious. Nevertheless, it is indispensably necessary in the beginning of the disease; and if omitted at that time, the violent heat and motion of the blood increase the putrescence of the humours to such a degree as to bring on the fatal consequences much sooner than would otherwise have happened.

After bleeding, we come to the second indication of cure, namely, to evacuate as much of the bilious and putrid humours as soon and as safely as we can. The irritable state of the stomach, from the putrid bilious humours constantly attending this fever, with almost continual retchings, and violent vomitings, seem to indicate the giving of an emetic: but the stomach is always observed to be so violently stimulated and irritated, and most commonly inflamed by the acrimony of the putrescent bile, that any emetic, even the most mild and gentle, given in the smallest dose, brings on an incessant vomiting, which continues, in spite of all remedies, till a mortification and death ensue. Instead of this, it is proper to give large draughts of warm water, which, without any additional stimulus to the coats of the stomach, evacuates its acrid and putrid contents, commonly with great relief to the patient; the warm water also acts as an emollient fotus to the inflamed coats of the stomach; and thus abates the inflammation, and prevents the gangrene and mortification from coming on.

After the patient has by this means vomited seven or eight times or oftener, and discharged a great quantity of yellow and blackish bilious matter, as they often do, a grain, or a grain and a half, of crude opium is given, in order to procure some respite from the violent retching, vomiting, and anxiety. The person is desired to take nothing into his stomach for two hours after this, by which means it is seldom or never rejected; and thus all the symptoms are considerably abated, the retching and vomiting either totally cease or are very much lessened, so that medicines may now be exhibited which the stomach would not have retained before. These are cooling acid juleps, or other antiseptic remedies; but neither nitre nor any of its preparations will commonly be found to stay on the stomach; nor are the nitrous medicines, or even the common anti-emetic draughts, of any great service in this disease, even though they should agree with the stomach, on account of their attenuating property.

If the patient has not a ſtool or two after drinking the warm water and vomiting, it is neceſſary to give the purging clyſter (No. 34.); and when ſix or eight hours' reſt have been obtained, a gentle antiphlogiſtic and antiſeptic purge, in order to evacuate by ſtool as much of the bilious matter as we poſſibly can. Or if the patient has a purging before, which ſometimes though very rarely happens, a doſe of toaſted rhubarb is given, and an antiſeptic anodyne after it has operated, to abate and check the too great purging, but not to ſtop it, as this evacuation has been always obſerved to be of ſervice, provided it be not too violent.

After this indication is completely anſwered, the next is to exhibit ſuch proper antiſeptic medicines as may ſtop the putreſcent diſpoſition of the fluids. Here the Peruvian bark would ſeem to be the moſt proper remedy; but unluckily the ſtomachs of the patients in this diſeaſe are ſo much irritated, and ſo apt to reject every thing, that the bark cannot be retained in any form whatever. In this caſe Dr. Percival recommends columbo-root, the infuſion of which is found to be a powerful anti-emetic and antiputreſcent medicine, and might perhaps ſo far alter the ſtate of the ſtomach as to make it bear the bark. Dr. Hillary, however, who was ignorant of the virtues of columbo, ſubſtituted the *radix ſerpentariæ Virginianæ* with ſucceſs. A ſlight infuſion of this root not only ſat eaſily on the ſtomach of the patient, but moderately raiſed the pulſe and fever, both of which are now too low. The following receipt was found the moſt agreeable and efficacious:

(No. 53). ℞ Rad. ſerpent. Virginian. ʒii.
Croc. Ang. ʒſs.
M. et infunde vaſe clauſo in aq. bullien. q. ſ. per horam unam ut col. ℥vi. Adde
Aq. menth. ſativ. ʒii.
Vin. Maderienſ. ℥iv.
Syr. croc. vel ſyr. e mecon. ʒj.
Vitriol. acid. dilut. q. ſ. ad grat. acidior. ſapor.

Exhibe cochlearia duo vel tria ſingulis horis vel bihoris, vel ſæpius pro re nata.

By the uſe of this medicine, and ſoft light nouriſhment taken in ſmall quantities, the pulſe is uſually kept up, and the diſeaſe goes off. But if, after taking this a little while, we find that the pulſe does not riſe, but on the contrary that a coldneſs of the extreme parts comes on, the medicines muſt be made more warming, by increaſing the quantity of the ſnake-root, and ſaffron, or by adding *tinct. aromat. confectio cardiaca*, or the like, but not by the uſe of volatile ſpirits and ſalts, which hurt by their ſtimulating and diſſolving qualities. Bliſters, our author reprobates in the ſtrongeſt terms, and affirms that he has ſeen the place where a bliſter was applied turned perfectly black and ſphacelated; ſo

that, if the ſpine and ends of the ribs had not hindered, a large ſquare paſſage would have been opened into the cavity of the thorax, had the patient lived a few hours after it.

At the ſame time that the ſtrength of the patient was kept up by the medicines above mentioned, or by others ſimilar, he gave repeated gentle purgatives every ſecond or third day, and ſometimes, when the ſymptoms were very urgent, every day, for four or five days ſucceſſively. But if proper methods be taken in the beginning of the diſeaſe, it is ſeldom that ſuch a repetition of purging is neceſſary; and the doctor gives the following remarkable inſtance of the efficacy of this method of treating the diſeaſe: "A young man about twenty-four years of age, ſurgeon to a Guinea ſhip, was brought into a houſe where I was viſiting a patient. He was of a ſanguine robuſt conſtitution, and a lover of ſpirituous liquors, and had been drunk three days and three nights ſucceſſively, and in that condition had run ſeveral races on the hot ſea-ſhore, near noon, with the ſailors, in the heat of the ſun; and to complete his folly, lay the laſt night, after that exerciſe, in the open air under a tamarind-tree all the night, where he was ſeized in the morning with all the ſymptoms of this fever, in the moſt violent manner that I have ever ſeen any one. In this condition he was brought to the houſe where I was: his retching and vomiting were ſo inceſſant, that he could not get time to ſay yes, or no, to the queſtions which I aſked, without waiting ſome time for it, each time; his eyes were red and inflamed, attended with a burning heat, as uſual in the beginning of this fever; and he had all the other ſymptoms which attended the firſt attack of this fever in the moſt violent manner, which I need not repeat. I ordered ℥xvi. of blood to be taken from him, which was very florid, thin, and much diſſolved; and then directed him to drink warm water freely and to vomit eight or ten times; and after that to take *extract. Thebaic.* gr. jſs. and take nothing for two hours after it. But I being gone, and he finding that he vomited with more eaſe, leſs ſickneſs and retching, with the warm water, than he did before, and being much alarmed at his having this fever, he drank three gallons of the water, and brought up great quantities of yellow and blackiſh bilious matter with it, and waſhed his ſtomach effectually. He then took opium, and ſlept three or four hours after it; and the vomiting ceaſed: he took ſome panada, and four hours after that the purge of manna and tamarinds, &c. which gave him eight ſtools, and carried a good-deal more of the putrid bilious matter off downwards; and got ſome reſt after it: he then took of an antiſeptic julep often, and light nouriſhment, a little acid, at the intervals; and repeated the purge on the third day, as directed. Being called out of the town, I did not ſee him till I found him free from the fever and all its ſymptoms, on the fourth morning after; he ſaid he had followed my directions;

was weak and low, and his skin a little yellow, but much less so than usual, unless when the bilious matter is thus carried off. I ordered him to take *vitrioli acid. dilut. gut.* lx. three or four times a-day for a few days, in an infusion of mint-leaves with a little snake-root, made as tea; which he did, and recovered perfectly well in seven or eight days' time.

"This patient being seized in so violent a manner, and recovering in so short a time, and so near to the rule which the elegant Celsus recommends, *Citò, tutè, et jucundè*, not only confirmed the above manner of reasoning on the cause and nature of this disease to be right, but made me determine to follow the same method as I possibly could ever since, and I must add, with the same good success also, when I am called so early in the disease that I can strictly pursue it, which is too seldom the case; for in general the physician is not called till the fourth or fifth day, or later, when the putrid acrid bilious matter is a great part of it carried into the blood, which it has so dissolved and brought its whole mass into a colliquated, putrid, gangrenescent state, that the best of methods, and the most efficacious medicines, however judiciously timed and applied, are precarious and uncertain; or sometimes it is so far advanced, that the ablest physician can do no more than tell the relations of the sick that it is too late, and that they can live but a few hours: for I know no disease in which the recovery of the patient so much depends upon the right or wrong method of treating it, at the very first attack or beginning of the disease, as this fever does; for by thus discharging and carrying the putrid, acrimonious, bilious matter, out of the body before much of it is carried into the blood, not only most of the bad symptoms which attend the second state of the fever are prevented from coming on, but the hæmorrhagies, and the yellowness of the skin, &c. also, and the fever, soon subside too; for I have never seen any hæmorrhagy come on, and but little yellowness, or in some none, when they were thus treated.

"And when the last stage of this fever is come on before we are called in, provided that it is not at the very latter end of it, I have always found that this method of gentle purging, whenever the before-mentioned symptoms indicate it, and a liberal use of the antiseptic medicines in the intervals, has been so successful, that I have seen but two patients that have died in this fever during the eight years past in which I treated it in this manner;—and one of them was so weak that he could not take a spoonful of any thing, and so near his end that he died about two hours after without taking any medicine; and the other killed himself by drinking a gallon of water in less than three hours' time (after taking half an ounce of manna in the morning), which struck such a coldness into his whole body that he died;—though I have visited several every year, and in some years a great many: therefore I take the

liberty of recommending this method to others, and wish it to be as successful to all."

To the genus of *typhus* also belong all those fevers attended with very profuse and debilitating sweats, and which have sometimes, not without good reason, been accounted plagues: such as the English sweating-sickness, Miliaris sudatoria, *Sauv.* sp. 5. Ephemera sudatoria, *Sauv.* sp. 7. Ephemera Britannica, *Caius de ephem. Britan.*

The great experience and high reputation of the author we have quoted, justify us sufficiently in what we have stated above; but it is now necessary to exhibit the opinions and practice of later writers, particularly Dr. Rush of Philadelphia, who, after having lost, in 1793, a multitude of patients affected with the yellow fever, under the established treatment, at last hit upon the mode of cure by *calomel purges and bleeding*; by which most of his subsequent patients were cured.

The hint was derived from a manuscript account of the yellow fever which appeared in Virginia in 1741, given to the author by Dr. Franklin.

"In reading the history of the method of cure (says Dr. Rush), I was much struck with the following passages.

"It must be remarked that this evacuation (meaning by purges) is more necessary in this, than in most other fevers. The abdominal viscera are the parts principally affected in this disease, but by this timely evacuation, their feculent corruptible contents are discharged, before they corrupt and produce any ill effects, and their various emunctories and secerning vessels are set open, so as to allow a free discharge of their contents, and consequently a security to the parts themselves, during the course of the disease. By this evacuation the very minera of the disease, proceeding from the putrid miasma fermenting with the salivary, bilious, and other inquiline humours of the body, is sometimes eradicated by timely emptying the abdominal viscera on which it first fixes, after which a gentle sweat does as it were nip it in its bud. Where the primæ viæ, but especially the stomach, is loaded with an offensive matter, or contracted, and convulsed with the irritation of its stimulus, there is no procuring a laudable sweat, till that is removed; after which a necessary quantity of sweat breaks out *of its own accord*, these parts promoting it when, by an absterging medicine, they are eased of the burden or stimulus which oppresses them."

"All these acute putrid fevers ever require some evacuation to bring them to a perfect crisis and solution, and that even by stools, which must be promoted by art, where Nature does not do the business herself. On this account, an *ill-timed scrupulousness about the weakness of the body* is of bad consequence in these urging circumstances; for it is that which seems chiefly to make evacu-

ations neceſſary, which nature ever attempts, after the humours are fit to be expelled, but is not able to accompliſh for the moſt part in this diſeaſe; and I can affirm, that I have given a purge in this caſe, when *the pulſe has been ſo low that it could hardly* be felt, and the *debility extreme*, yet *both one and the other* have been *reſtored by it.*"

"This evacuation muſt be procured by *lenitive chologoque* purges."

Dr. Ruſh having duly weighed theſe remarks, reſolved on the following:

(No. 54.) ℞ Calomel. gran. x.
Pulv. Rad. Jallap. gran. xv. M. f. Pulv. purg.

This was adminiſtered in the firſt inſtance, and repeated every ſix hours till four or five large evacuations were produced. Some practitioners who had before employed calomel had done no good with it; becauſe they had given it "in *ſmall* and *ſingle doſes* only; and had followed it by large doſes of bark, wine, and opium." The practice becoming general, Dr. Ruſh accompanied the powders with the following inſtructions:

"As ſoon as you are affected (whether by *night* or day) with a pain in the head or back, ſickneſs at ſtomach, chills or fever; more eſpecially, if thoſe ſymptoms be accompanied by a redneſs or faint yellowneſs in the eyes; take one of the powders in a little ſugar and water, every ſix hours, until they produce four or five *large* evacuations from the bowels;—drink plentifully of water-gruel, or barley-water, or chicken-water, or any other mild drink that is agreeable, to aſſiſt the operation of the phyſic. It will be proper to lie in bed while the medicine is operating; by which means a plentiful ſweat will be more eaſily brought on. After the bowels are *thoroughly* cleanſed, if the pulſe be *full* or *tenſe*, eight or ten ounces of blood ſhould be taken from the arm, and *more*, if the tenſion or fulneſs of the pulſe ſhould continue. Balm tea, toaſt and water, lemonade, tamarind-water, weak camomile tea, or barley-water, ſhould be drank during this ſtate of the diſorder; and the bowels ſhould be kept conſtantly open, either by another powder, or by ſmall doſes of cremor tartar, or cooling ſalts, or by common opening clyſters: but if the pulſe ſhould become *weak* and *low* after the bowels are cleanſed, infuſions of camomile and ſnake-root in water, elixir of vitriol, and laudanum; alſo wine and water, or wine, punch, or porter, ſhould be given, and the bark, either in infuſion in water, or in ſubſtance, may be adminiſtered in the intermiſſion of the fever. Bliſters may likewiſe be applied to the ſides, neck, or head, in this ſtate of the diſorder, and the lower limbs may be wrapped up in flannels wetted in hot vinegar or water. The food ſhould conſiſt of gruel, ſago, panada, tapioca, tea, coffee, weak chocolate, wine whey, chicken broth, and the white meats, according to the weak or active ſtate of the ſyſtem. The fruits of the ſeaſon may be

eaten with advantage at all times. Freſh air ſhould be admitted into the room in all caſes, and *cool* air when the pulſe is full and tenſe. The floor ſhould be ſprinkled now and then with vinegar, and the diſcharges from the body be removed as ſpeedily as poſſible."

"The beſt preventives of the diſorder, are a temperate diet, conſiſting chiefly of vegetables, great moderation in the exerciſes of body and mind, warm clothing, cleanlineſs, and a gently open ſtate of the bowels."

Reſpecting *blood-letting* in this diſeaſe, Dr. Ruſh makes the following important remarks:

"I ſhall now mention (ſays he) ſome of the circumſtances which directed and regulated the uſe of this remedy.

"1. Where bleeding had been omitted for three days, in acute caſes, it was ſeldom uſeful. Where purging had been uſed, it was ſometimes ſucceſsful. I recovered two patients who had taken the mercurial purges, whom I bled for the firſt time on the 7th day. One of them was the daughter of Mr. James Creſſon; the other was a journeyman ſhip-carpenter at Kenſington. In thoſe caſes where bleeding had been uſed on the firſt day, it was both ſafe and uſeful to repeat it every day afterwards, during the continuance of the fever.

"2. I preferred bleeding in the exacerbation of the fever. The remedy here was applied when the diſeaſe was in its greateſt force. A ſingle paroxyſm was like a ſudden ſquall of the ſyſtem, and unleſs abated by bleeding, or purging, produced univerſal diſorganization. I preferred the former to the latter remedy, in caſes of great danger, becauſe it was more ſpeedy, and more certain in its operation.

"3. I bled in ſeveral inſtances in the remiſſion of the fever, where the pulſe was tenſe or chorded, more eſpecially if the patient were unable to ſit up without fainting. The bleeding in theſe caſes leſſened the violence of the ſucceeding paroxyſm.

"4. I bled in all thoſe caſes in which the pulſe was preternaturally ſlow, provided it was tenſe. Mr. Benj. W. Morris, Mr. Thomas Wharton, jun. and Mr. Wm. Sanſon, all owe their lives probably to their having been bled in the above ſtate of the pulſe. I was led to uſe bleeding in this ſtate of the pulſe, not only by the theory of the diſeaſe which I had adopted, but by the ſucceſs which had often attended this remedy, in a ſlow and depreſſed ſtate of the pulſe in apoplexy and pneumony. I had, moreover, the authority of Dr. Moſeley in its favour, in the yellow fever, and of Dr. Sydenham, in his account of a new fever, which appeared in the year 1685. The words of the latter phyſician are ſo appoſite to the caſes which have been mentioned, that I hope I ſhall be excuſed for inſerting them in this place. 'All the ſymptoms of weakneſs (ſays our author) proceed from

nature's being in a manner oppreſſed, and overcome by the firſt attack of the diſeaſe, ſo as not to be able to raiſe regular ſymptoms adequate to the violence of the fever. I remember to have met with a remarkable inſtance of this ſeveral years ago, in a young man I then attended; for though he ſeemed in a manner expiring, yet the outward parts felt ſo cool, that I could not perſuade the attendants he had a fever, which could not diſengage, and ſhew itſelf clearly, becauſe the veſſels were ſo full as to obſtruct the motion of the blood. However, I ſaid that they would ſoon find the fever riſe high enough upon bleeding him. Accordingly after taking away a large quantity of blood, as violent a fever appeared as ever I met with, and did not go off till bleeding had been uſed three or four times.'

" 5. I bled in thoſe caſes in which the fever appeared in a tertian form, provided the pulſe was full and tenſe. I well recollect the ſurpriſe with which Mr. Van Berkel heard this preſcription from me, at a time when he was able to walk and ride out on the intermediate days of a tertian fever. The event which followed this preſcription, ſhewed that it was not diſproportioned to the violence of his diſeaſe, for it ſoon put on ſuch acute and inflammatory ſymptoms as to require ſix ſubſequent bleedings to ſubdue it.

" 6. I bled in thoſe caſes where patients were able to walk about, provided the pulſe was the ſame as had been mentioned under the 4th head. I was determined as to the propriety of bleeding in theſe two ſuppoſed mild forms of the fever, by having obſerved each of them when left to themſelves frequently to terminate in death.

" 7. I paid no regard to the diſſolved ſtate of the blood, when it appeared on the firſt or ſecond day of the diſorder, but repeated the bleedings afterwards in every caſe, where the pulſe continued to indicate it. It was common to ſee ſizy blood to ſucceed that which was diſſolved. This occurred in Mr. Joſiah Coats, and Mr. Samuel Powel. Had I believed that this diſſolved ſtate of the blood aroſe from its putrefaction, I ſhould have laid aſide my lancet as ſoon as I ſaw it, but I had long ago parted with all idea of putrefaction in bilious fevers. The refutation of this doctrine, was the object of one of my papers in the Medical Society of Edinburgh, in the year 1767. The diſſolved appearance of the blood, I ſuppoſed to be the effect of a certain action of the blood veſſels upon it. It occurs in fevers in which no putrid or foreign matter has been introduced into the ſyſtem. The typhoid pneumony deſcribed by Dr. Huxham in his epidemics, and well known in the ſouthern ſtates of America, in the ſpring of the year, has never been aſcribed to any other remote cauſe, than the ſenſible qualities of the air, and yet the blood is generally diſſolved in this diſorder.

"8. The presence of petechiæ did not deter me from repeating blood-letting, where the pulse retained its fulness or tension. I prescribed it with success in the case of Dr. Mease, and of Mrs. Gibler, in Dock-street, in each of whom petechiæ had appeared. Bleeding was equally effectual in the case of the Rev. Mr. Keating, at a time when his arms were spotted with that species of eruption which I have compared to Moschetto bites; I had precedents in Dr. De Haen*, and Dr. Sydenham†, in favour of this practice. So far from viewing these eruptions as signs of putrefaction, I considered them as marks of the highest possible inflammatory diathesis. They disappeared in each of the above cases after bleeding.

"9. In determining the quantity of blood to be drawn, I was governed by the state of the pulse, and by the temperature of the weather. In the beginning of September, I found one or two moderate bleedings sufficient to subdue the fever; but in proportion as the system arose by the diminution of the stimulus of heat, and the fever put on more *visible* signs of inflammatory diathesis, more frequent bleedings became necessary. I bled many patients twice, and a few three times a-day. I preferred frequent and small to large bleedings in the beginning of September; but towards the height and close of the epidemic, I saw no inconvenience from the loss of a pint, and even twenty ounces of blood at a time. I drew from many persons seventy and eighty ounces of it in five days; and from a few, a much larger quantity. Mr. Gribble, cedar-cooper, in Front-street, lost by ten bleedings, an hundred ounces of blood; Mr. George, a carter in North-street, lost about the same quantity by five bleedings; and Mr. Peter Mierken, one hundred and fourteen ounces in five days. Mr. Toy, blacksmith near Dock-street, was eight times bled in the course of seven days. The quantity taken from him was about an hundred ounces. The blood in all these cases was dense, and in the last very sizy. They were all attended in the month of October, and chiefly by my pupil Mr. Fisher; and they are all this day living and healthy instances of the efficacy of copious blood-letting, and of the intrepidity and judgment of their young physician. Children, and even old people, bore the loss of much more blood in this fever, than in common inflammatory fevers. I took above thirty ounces, in five bleedings, from a daughter of Mr. Robert Bridges, who was then in the ninth year of her age. Even great debility, whether natural or brought on by previous diseases, did not, in those few cases in which it yielded to the fever, deprive it of the uniformity of its inflammatory character."

We shall pursue this part of our subject with the following

* Ratio medendi, vol. ii. p. 162. vol. iv. p. 172.
† Vol. i. p. 210, and 2644.

practical remarks from Mr. Halliday; who, though he approves of purgatives, differs greatly from Dr. Rush on the subject of bleeding.

"I am every day more surprised (says he), when I see medical men order bleeding in such quantities, *usque animi deliquium*; and having seen such fatal consequences arising from it, I am obliged to say, and really to believe, that those gentlemen who used it in such disorders to so great an excess, have either not met with that tendency in the fluids to a dissolution and putrid state which here made itself apparent, or that they had but little practice, or paid but little attention to the different symptoms and termination of the disease. Having already explained the fatal consequences arising from bleeding, experienced from my own practice, and the innumerable ones I had the opportunity of seeing under the care of others, it is my opinion, that whoever has been so fortunate as to escape from this dreadful disease, by the use, or rather the abuse, of blood-letting, it arose from his entire vigour and robust habit of body; or the little tendency of the fluids to dissolution and putrefaction: and all those that have survived this method of cure, have been under a state of convalescence for two, three, or four months, and frequently the disorder terminated in remittents, or intermittents of the most difficult cure.

"In no stage of this disorder can emetics or antimonials be administered, owing to the irritable state of the stomach, and its propensity to vomit, that when once stirred up (that terrible and direful symptom), it is almost out of the power of medicine to moderate it, or even to admit the purgatives so necessary, and the only medicines which, from experience, have been proved to be the principal part of the cure. Any person that has come into these hot climates, and who has exposed himself to either of the causes which produce this fever, has sufficient warning, if he would attend to it, and sufficient time to cure it by anticipation; because, as soon as the patient feels any extraordinary heaviness in the body, with weariness, a stretching and yawning, and particularly when followed by a severe attack of the fever, intense pains of the head, &c. he then has very sufficient reasons for being certified that it is the beginning of the disorder, which is coming on with all the violent and customary symptoms: this is the time that the faculty ought to cut off the arms of the enemy, not by bleeding (as a greater part of the profession order), but with active and continual purges, until an entire cessation, or total ease, is obtained from all the symptoms. When one of the faculty is certified of this opinion, either by the disorder being prevalent, or by the symptoms which characterise it, without more delay or loss of time, he should administer the following medicine in three parts, with the interval of two hours between each, and the suitable nourishment between one and the other.

(No. 55.) ℞ Magneſiæ vitriolatæ ʒj.
Mannæ ʒiij.
Decoct. fruct. Tamarind. ℔j.
Fiat ſolutio.

"This medicine is adminiſtered with intention of effecting an immediate and plentiful evacuation, with the greateſt facility, and without the irritation the draſtic purges uſually cauſe; for which reaſon, I have generally adopted this method, not only in the beginning of the diſeaſe, but alſo in different caſes, when it reached the terrible ſtage of the black vomiting; and always with equal ſucceſs, conſtantly procuring a total alleviation and entire intermiſſion of all the ſymptoms: continuing the uſe of the medicine, according to the age, ſtrength, and violence of the diſorder. There having occurred different caſes, in which, through the violence of the diſorder, a difficulty in ſome to evacuate, and an urgency of the vomitings, I have been obliged to repeat the ſaid quantity twice or three times in twenty-four hours, obſerving the ſame regimen until it effected the deſired purpoſe, which it generally did in twenty-four or forty-eight hours, and in very obſtinate caſes, on the third or fourth day. In theſe violent caſes, when on the firſt doſe of the ſaid medicine an evacuation did not enſue ſo copiouſly as was deſired, it was then aſſiſted with the common purging clyſters, or rather better with the mixture of ſalt water and oil of olives, which, by the irritation that it created in the *inteſtinum rectum*, rarely or never failed of producing the deſired effect. The fortunate remiſſion or criſis of the fever being already accompliſhed, the irritation muſt in its turn be attended to, as much for whatever it brings along with it, as for the purging medicines ſo often repeated, though adminiſtered with the aforeſaid precautions. I ordered what follows:

(No. 56.) ℞ Decoct. cinchonæ (fruct. tamarind. præp.) ℔j.
Nitri purif. ʒiſs. ad ʒij.
Pulv. e Chel. ℈ij.
Syr. violar. ʒj. Miſce.

"I repeated it twice, thrice, and four times (dividing the ſaid doſe into three parts, allowing an intermediate ſpace of three hours between each), until I found the pulſe ſoft, eaſy, and regular, which it will attain on the ſecond or third day. Finally, to complete the cure, to reſtore and recover the ſtomach and other viſcera from their ſtate of relaxation, and at the ſame time to evacuate eaſily the remainder of the diſorder, I uſed the following:

(No. 57.) ℞ Cinchonæ in pulv. trit. ʒij.
Rad. Serpent. Virg. ʒſs.
Coque in Aquæ fontis ℔ij. ad ℔iſs.
Cola et adde,
Extracti cinchonæ ʒij.
Tinct. Rhabarb. ʒij. Miſce.

"I ordered that the quantity of two or three ounces might be taken every second or third hour, continuing this, or any other preparation of the Peruvian bark, until the patient is found entirely re-eſtabliſhed and free from every incumbrance, which rarely exceeds the ſixth, eighth, or tenth day from the firſt attack. When the ſymptoms were violent, and apparently about to terminate fatally, after a plentiful evacuation, or on the firſt remiſſion, I adminiſtered the febrifuge mixture of the Peruvian bark, &c. in a great quantity, and always fortunately, not having failed in one of my endeavours after I put in practice theſe ſimple, though powerful medicines.

"During the time this diſorder laſted in Vera Cruz, copies of theſe recipes were carried thither; and, I have the ſatisfaction to add, were uſed with the greateſt ſucceſs in every caſe to which they were applied."

Confiding in the truth of Mr. Halliday's repreſentations of the degree of ſucceſs which has attended theſe means, we have thought it right to give them thus at large; notwithſtanding the objections which might be brought againſt the rationale of his preſcriptions. The following plan of treatment is recommended by Dr. Moſeley:

"It is unneceſſary" ſays the doctor in his treatiſe on tropical diſeaſes, "to fill many pages with a long catalogue of preſcriptions and medicines, in the treatment of this fever, for it is compriſed in a few words, and almoſt as few medicines; and requires only care and attention that thoſe moments do not ſlip away, that the occaſion is for ever loſt, when

Bleeding,	*Baths*,	*Bliſters, and*
Purging,	*Diaphoretics*,	*Bark*,

ought to have been timely uſed, for the ſalvation of the patient's life; and that afterwards they are not untimely employed for its deſtruction.

"If a perſon newly arrived in the Weſt Indies has ſubjected himſelf to any of the cauſes which may produce this fever, previous to its attack, he has ſufficient warning given him, if he will attend to it, and time enough in general to cure it by anticipation. For as ſoon as any heavineſs, or laſſitude, or reſtleſſneſs, or ſtretching and yawning, is perceived, he has reaſon to expect that they are the harbingers of this tragedy; and he ſhould immediately be blooded, and take a doſe of ſalts, and dilute plentifully, and keep himſelf quiet and cool: and after the operation of the ſalts, he ſhould take ſmall doſes of *James's Powder*, live low, and drink barley-water. After the body is well evacuated, and cooled, it is always prudent to take bark.

"In the firſt ſtage of the fever, when it has made a regular attack, when theſe precautions have not been uſed, or when they have failed, and the patient is no longer able to abſtain from his

bed, he ſhould be kept in a large room, as cool as poſſible, covered lightly with bed-clothes, with a circulation of air admitted into the room, but not directly upon, or near the bed; and this muſt be obſerved throughout the whole of the diſeaſe.—'Amplo conclavi tenendus, quo multum et purum aërem trahere poſſit; neque multis veſtimentis ſtrangulandus, ſed admodum levibus tantum velandus eſt *.'—'Et per flabellum aër ignavior concitetur †.'

"Bleeding muſt then be performed, and muſt be repeated every ſix or eight hours, or whenever the exacerbations come on, while the heat, fulneſs of pulſe, and pains, continue: and if theſe ſymptoms be violent and obſtinate, and do not abate during the firſt thirty-ſix or forty-eight hours of the fever, bleeding ſhould be executed, *uſque ad animi deliquium.*"

Dr. Moſeley has obſerved, that the blood taken away in the beginning of the yellow fever, is very florid, and of the arterial blood colour; and that the ſurface is never ſizy, and ſeldom even contracted, as is uſually the caſe when we bleed in inflammatory diſeaſes.

"The intention of bleeding," continues he, "can be anſwered only by performing it *immediately*, and in the *moſt extenſive manner*; which the high ſtate of inflammation, and the rapid progreſs of the diſeaſe, demand. Taking away only ſix or eight ounces of blood, becauſe the patient may be faint, which is a ſymptom of the diſeaſe, is doing nothing towards the cure.—It is like ERASISTRATUS, giving *three drops of wine* to a patient; juſtly ridiculed by CELSUS. Where bleeding is improper, no blood ſhould be taken away;—where it is proper, that quantity cannot relieve;—and it is loſing time which can never be regained.

"Some practitioners who have not been witneſſes of the good effects of bleeding, from never having taken away a ſufficient quantity of blood, imagine that bleeding is not among the remedies for this diſeaſe. But this diſeaſe truly is not among thoſe that yield to the loſs of a few ounces of blood: for as BOTALLUS obſerves of the pleuriſy, peripneumony, and *Cauſus*, "Num huic ſatis fuerit miſſio ſanguinis unciarum decem aut duodecim? non certe, ſed librarum vel duarum vel etiam trium ‡."

"Bleeding, it is evident, muſt not be performed in any other ſtage of the diſeaſe, than the firſt, or inflammatory ſtage; but this has been injudiciouſly done, which has given riſe to the notion, that a patient will ſeldom bear more than two bleedings.

"Many practitioners have been deterred from bleeding their patients, from the depreſſion of the pulſe, and from the faintneſs which ſometimes accompany the very firſt onſet of this fever; but here

* Celſus, Curatio Ardentis Febris, Lib. III. Cap. 7.
† Ætius, Tetr. 2. Serm. 1. Cap. 78.
‡ De Curatione per Sanguinis Miſſionem

the pulse always rises, and the faintness disappears, as the heart is relieved from its oppression, by the loss of blood.

"Faintness, and depression of the pulse here, are not to be considered like those circumstances, where putrefaction has commenced, or where there has been long and fatiguing illness. They are symptoms here of *plethora*, the reverse of inanition; and bleeding is advised for such syncopes by two of the greatest physicians the world has produced *."

Dr. Moseley further supports his plan of treatment, by citing the injunction of HIPPOCRATES, who directs, "In acutis morbis venam secabis, si morbus vehemens appareat, et qui ægrotant ætatis vigore fuerint, et virium robor ipsis adfuerit †."

"Nor," says Dr. Moseley, "is fainting, during the operation, any reason for not repeating it, in the first stage of the fever; for I have often cured it by bleeding only. GALEN asserts the same ‡: and it has frequently happened in the West-Indies, that accidental bleeding from the orifice, when a patient has fallen asleep, to far greater quantities than have ever been directed to be taken away, has carried off the fever entirely: and the surprise on discovering a profusion of blood in the bed, has been changed to joy, for the alteration produced in the patient.

"The efforts of Nature would be oftener successful than they are, were not her powers totally overcome, in hot climates. Bleeding at the nose, in the first stage of this fever, has sometimes removed it; and it is as certain a solution of this fever, as it is of the *Causus* in Europe §.

"In the early part of the disease, spontaneous hæmorrhage is always critical, and should never be suppressed; afterwards it is symptomatical, and if not stopped, the patient soon sinks under it.

"Eruptions about the lips and nose, painful boils, or phlegmons on the body, which always suppurate unkindly, or an abscess forming, are also critical, and generally terminate the disease.

"Sweating, in the first stage of the disease, is seldom critical: for, as SYDENHAM says, on a similar occasion, 'non a prævia concoctione, sed a confuso particularum noxiarum motu, is eliceretur.'

"Whenever sweats are critical, which may happen very early in the disease, if the patient has been well evacuated, they are accompanied with a cessation of vomiting, and a change of the appearance of the urine; the sweating then is to be assiduously pro-

* Aretæus, de Cur. Acut. Morb. Lib. II. Cap. 3. and Alexander of Tralles. Lib. XII. Cap. 3.

† Vide Hippocrat. De Acut. Morb. Victu. Sect. 4. Art. 17.

‡ "Curatur, in principio, sanguinis missione." Introduct. seu Medic. Cap. 13.

§ "Si sanguis è naribus fluxerit, solvitur affectio.
Hippocrat. de Acut. Morb. Victu. Sect. 4. Art. 10.

noted, and if preceded by a bleeding of the nose, it is a complete crisis."

Dr. Moseley's opinion respecting the employment of emetics in this disease forms a singular feature in his plan of treatment.

"The *sickness of the stomach*," says he, "and disagreeable *taste* in the mouth, indicate the quality, and not the quantity of the offending secretions. The vomiting is from irritation in the stomach, and not from plenitude. Therefore vomits are never to be given, though strongly advised by TOWNE:—no, not so much as warm water, recommended by HILLARY, for fear of exciting and stirring up that terrible operation, which, when once begun, no art can, sometimes, allay. Neither will the first part of that counsel authorise disturbing the stomach in this fever, which advises, '*Si os amarum fuerit, vomere confert, et alvum subluere**;'—

"For it will be found that the nausea and vomiting will not only remain, '*Verum si ad hæc non solvatur....purgato*†,' but the stomach will be so aggravated, that no purgative can be retained: it will be thrown up the instant it is taken, and the only means that can remove these symptoms, will be defeated.

"The aphorism, 'incipientibus morbis, si quid movendum sit, move,' is no more a reason for giving a vomit than a purge; and the operation must correspond with the nature of the disease.

"How often have I seen, and lamented, the effects of emetic tartar, given to remove the supposed cause of the treacherous symptom of vomiting!—Even in slight degrees of fever in the West Indies, in young plethoric subjects newly arrived, the stomach has been sometimes destroyed by it. Instead of removing the irritating sickness in this fever, or exciting a diaphoresis, a spasm has been produced in the stomach; incessant vomiting; inflammation; the vessels of the thorax and head have been stifled with blood; and the patient has vomited away his life.

"Nature's index here is misconceived. It is for assistance that she makes these struggles, shewing that the part is suffering destruction. It is not an indication that her oppressions are leaving her in that manner: for who ever saw, or ever heard of a crisis from incessant vomiting?

"When a sufficient quantity of blood has been taken away, which is never done, let the patient's habit be what it may, while the heat, reiterated exacerbations, flushings in the face, thirst, pains in the head, and burning in the eyes, remain; the next step is to evacuate the contents of the bowels, and turn the humours downwards.—"

"This fever is generally preceded and accompanied by costiveness; from which, and the incessant vomiting, ending in blood, it

* Hippocrat. de Acut. Morb. Victu, Sect. 4. Art. 6.
† Ibid. Sect. 4. Art. 7.

ſeems as if the cœliac artery acted the part by the conſtitution, here, on the ſtomach, that the meſenteric arteries do on the inteſtines, in a dyſentery.

" But if large and repeated bleedings during the firſt two days ſhould not remove the thirſt, pains, fluſhings, and heat in the eyes, and the ſtate of the ſtomach ſhould be ſuch as to reject every thing that is taken, ſo that there is no chance of procuring evacuation by ſtool, the patient ſhould have repeated purgative clyſters, and be put into a *tepid bath.*

" ' Lavandi ſunt qui fervida et perardenti febri laborant, in domo potiſſimum, ubi ſolium habeatur tepente aqua plenum, ut totum ægri corpus undiquaque ab aqua operiatur' *."

The doctor propoſes that the bath ſhould be compoſed of " a weak decoction of camomile flowers, in which a little nitre may be diſſolved, and ſome vinegar added ;" his reaſons, however, for this compoſition, are not given. Of the uſe of the bath, he ſays, " this will often remove every ſymptom at once ; and diſpoſe the patient to a diaphoreſis, which muſt be promoted until a ſufficient quantity of ſome purgative medicine can be taken, ſo as to make an effectual operation downwards.

" There is ſeldom a neceſſity to repeat the bath, as the ſtrictures and tenſion generally yield on the firſt immerſion. The patient ſhould not remain long in the bath, nor ſhould it be deferred until late in the diſeaſe, for it can be of no uſe when the ſtomach is deſtroyed.

" To aſſuage the vehemence of the thirſt attending a cauſus, it was the cuſtom of the ancients to give the juice of cooling vegetables, and fruits, and large draughts of cold water, and acidulated drinks ; and to apply cold, herbaceous, and acid cataplaſms to the ſtomach ; and after Galen, even to put the patient into a cold bath."—

" The bold and deciſive practice of Paul Ægineta in the cauſus, conveys an adequate idea that the ancients thought this was a diſeaſe to be extinguiſhed at once : but if the means he purſued were equal to that intent in the European, it is not in the Tropical cauſus, without bleeding."—

" Galen, from whom P. Ægineta has taken this doctrine, cured all his patients, after the firſt ſtage of the diſeaſe, with cold water ; and goes ſo far as to ſay, he never loſt one, where cold water was given in a proper manner †.

" But in giving cold water in the cauſus, none of the ancients, except Celſus, has obſerved ſufficient practical preciſion. Trallian ſays, he gave it only in the true cauſus, but not in the ſpurious cauſus. Ætius ſays, cold applications, and cold things, ſhould

* Trallianus, de Cauſo.

† Com. 4. in Lib. Hipp. de Acut. Morb. Victu, Sect. 4. Art. 12.

not be used but in the height of the exacerbations, lest they should act as repellents, and shut up the inward heat; and that when any doubt remains concerning using cold water, at first, the chill should be taken off.

"Celsus, with his usual accuracy, says, cold water should not be given before the fourth day, when the fever is at its height; then it should be drank in great quantities, to cool the stomach and præcordia, and to procure a vomiting, where it is necessary; after which, the patient is to be well covered, that he may sleep, by which means a profuse sweat will be raised, which, he says, is an immediate relief. But it is not to be given unless there be great thirst, and heat, and never when there are any pains or swelling about the præcordia, or any complaint in the lungs or fauces, or an ulcer, or faintness, or diarrhœa, or cough *.

"Giving very large draughts of cold water in the causus, to procure vomiting or sweating, after the manner of the ancients, is still practised in Italy, as I have often seen, where this fever is a common attendant on the heat of summer. But they wait before they give it, until nature has in some measure conquered the disease. Erastus says, this was the practice in his time.

"If cold water be used in our endemial causus, all the restrictions of Celsus and Ætius are necessary to be observed. But the misfortune here is, that cold water is improper in the beginning of the disease, and our causus is too rapid in its termination, to admit of any delay, or interval that is not filled up with medicine. Cold water cannot be given at the same time the patient is under the operation of cathartics; and from the first moment of the disease to the last, cathartics must be frequently administered. Our causus does not give us time to solace patients with grateful things; and to use cold water as an evacuant, would be risking the loss of time for an insufficient, or a doubtful remedy; as we must not look forward to a fourteen-days termination.

"The same objections operate against acids and fruits; and though lemonade, oranges, water melons, and granadillos, are extremely cooling and grateful, they interfere with the operation of purgatives, disorder the stomach, when used at the same time, and cause them to be rejected.

"Vitriolic acid should never be given; all acids are astringent, but this is particularly so: they contract the fibres of the stomach, and prevent purgatives from passing onwards through the intestines. Besides, they destroy the effect of neutral saline purgative medicines. Lemon-juice and salt of wormwood, given in an effervescent state, is a proper auxiliary and febrifuge. But the acid and

* Lib. III. Cap. 7.

alkali ſhould be duly proportioned to the exact point of neutrality, and ſufficiently diluted with water."

As far as the patient's *diet* is concerned, Dr. Moſeley recommends mucilaginous drinks, free from any ſtimulating ingredients, ſuch as barley-water, which, he ſays, always are found to anſwer beſt for common drink.

"Clyſters," he ſays, "are to be frequently given in the beginning of the diſeaſe, particularly where the patient is coſtive, and to precede the uſe of cathartics, and aſſiſt their operation.

"The purging medicine to be uſed in the yellow fever is the tartarum vitriolatum chryſtalliſatum, or ſal polychreſtus, diſſolved in equal parts of ſimple cinnamon and common water; or in ſimple cinnamon-water alone. It muſt be given in ſmall doſes, every hour, until it operates; and the patient is to dilute copiouſly while it operates, with very weak chicken-broth. The quantity of the ſalt is four drachms, to ſix or eight ounces of water (as much as the water will diſſolve); and the doſe of it may be two tableſpoonsful. In defect of this medicine, ſoluble tartar, or ſal catharticus amarus, or manna and cream of tartar, muſt be uſed. But let me *caution practitioners againſt adding emetic tartar*, in order to quicken the operation of theſe medicines, which, however uſeful it may often be in bilious diſeaſes, may be fatal in this.

"Purging generally completes the ſuppreſſion of the fever, and carries off the vomiting; but it muſt be continued while the ſtools remain bilious or fœtid; otherwiſe the fever will riſe, and the vomiting return."

If the fever ſtill continues, and the ſtomach be ſettled, after the bowels have been well evacuated, Dr. Moſeley ſeems to wave his objections to the uſe of antimonials, which he ſays may be had recourſe to as *ſudorifics*.—Repeated doſes of *James's powder*, are among the remedies he propoſes, together with the uſe of effervеſcing draughts, and plentiful diluents, ſuch as barley-water, or balm-tea, &c.

"An intermiſſion being procured," ſays he, "the bark, in ſubſtance, is immediately to be given, and repeated every hour, in drachm doſes, if the ſtomach will bear it, until twelve drachms have been taken; which is generally a ſufficient ſecurity againſt the progreſs of the diſeaſe. But it muſt ſtill be continued, at longer intervals, for many days; interpoſing mild cathartics, ſuch as an infuſion of rhubarb and tamarinds, with, or without, a ſmall quantity of ſal polychreſt, or by keeping the body from a coſtive ſtate, by clyſters."—

"In the *ſecond ſtage*, or *metaptoſis* of this fever, which I believe will ſeldom happen where the preceding directions have been faithfully purſued, we muſt draw a diſtinct line or boundary, in

the very beginning of it, and put *a final period to bleeding*. In this alarming ſtate, all the ſkill and power of phyſic muſt be ſummoned up, and quickly too, to oppoſe the various breaches which the diſeaſe is now making for the entrance of death.

"The ſtrength now begins to fail; the pulſe is ſinking; the ſuffuſion of yellowneſs is perceived in the eyes, neck, and breaſt; the vomiting inceſſant, and the ſtomach rejects every thing that is ſwallowed. A coldneſs here, not ſucceeded by ſweat, or bilious diſcharges, is almoſt a certain mortal ſymptom.

"In this ſtate nothing but *purging* can remove the vomiting, and ſave the patient's life. Here the corruption of the humours begins, and the ſtools are acrid, corroſive, and fœtid to an extraordinary degree.

"The misfortune here is, that the ſtomach retaining nothing, without great difficulty, oppoſes all our attempts. The tartarum vitriolatum, or ſal polychreſt, is a nauſeous medicine; but there is no other proper medicine of which a ſmall quantity will purge; which is the objection againſt tamarinds, cream of tartar, and manna. Nor is there any other, that I have ever found, equally cooling and attenuating. It muſt be given; and though part of it will be returned, yet ſome of it will remain; and by repeating a very ſmall quantity every hour, ſtools will in time be procured, and generally urine, plentifully. If the patient have five or ſix ſtools, the vomiting will ceaſe. He muſt dilute with weak chicken-broth.

"Clyſters may aſſiſt, with warm fomentations frequently applied to the region of the præcordia, which ſometimes bring out a crop of acrid eruptions about the pit of the ſtomach, on which the vomiting generally ceaſes; but in caſe theſe attempts fail, the patient ſhould be put into a tepid bath, and have a bliſter applied to his back, or to the inſide of his thighs, or, what is more effectual, to the region of the ſtomach; and a diaphoretic treatment ſhould be adopted, with *James's powder*, in order to relieve the internal irritation by revulſion, and enable the ſtomach to bear purgatives, which alone can carry off the offending humours, and remove that inverſion, as it were, of the periſtaltic motion, which is the ungovernable circumſtance, and by its continuance, the moſt certainly mortal ſymptom of this fever.

"It is in vain to think of *bark* and *antiſeptics*, though the approach of ſphacelation be evident. It is in vain to haraſs the miſerable patient with vitriolic acid, and a multitude of nauſeous and tormenting drugs. If ſtools can be procured, and the bowels kept conſtantly looſe, ſo that the acrid and putrid colluvies are carried off as faſt as they are ſecreted from the diſeaſed maſs, that the ſtomach may be preſerved, and able to retain bark, the diſeaſe may be conquered: if not, the patient will die.

"As to what is called fever, there is nothing, after the firſt ſtage

of the diſeaſe, which deſerves that name. Therefore, after the firſt ſtage, bark is always to be given, when the ſtomach will bear it. The worſt evil that generally attends giving bark here a little too early, is oppreſſion and load at the ſtomach; which if clyſters do not remove, the purgative ſolution, or a watery infuſion of rhubarb, will; or the uniting ſome purgative medicine with the bark.

"Sometimes, ſoon after the firſt attack of the fever, an abatement of every ſymptom is obtained; and thoſe who are not well acquainted with the pulſe, and what extenſive evacuations this fever demands, conclude that a remiſſion, or an intermiſſion, or a ſolution of the fever, is decided. But when this happens before the third day, a ſtrict attention to the pulſe and the excretions, will diſcover the deception; and ſhew, by their diſagreement with thoſe ſymptoms which appear favourable, that they appear ſo without a proper cauſe, and cannot be laſting.

"They who unfortunately have any dependence here, deſiſt from farther evacuations, and proceed to giving bark, and cordial nouriſhment. Every perſon about the patient is filled with flattering hopes of his recovery. But the evacuations have been diſcontinued too ſoon, and have not been ſufficient to extinguiſh entirely the inflammatory diſpoſition of the diſeaſe;—which, now aggravated, breaks out, and rages with redoubled violence, and hurries the patient into the ſecond ſtage of the diſeaſe, and then ſoon out of the world.

"This circumſtance of the endemial cauſus, I believe, has never been noticed before. They who have miſtaken the bilious remittent for the cauſus, conſequently ſpeak of remiſſions, which do not happen in this fever.

"Some of the ancients juſtly referred all continued fevers to ſome ſpecies of intermittent. Ætius ſays, a cauſus which exacerbates every other day, is a ſpecies of quotidian; that which exacerbates every other day, of a tertian, &c. and the difference only is, that the cauſus never comes on with rigor, nor intermits:—but when it exacerbates every other day, there is a diminution of fever, like a remiſſion.

"Theſe remarks are of infinite importance in hot climates; and, if rightly underſtood, point out the different times for evacuations, or for uſing ſtimulants and bliſters to advantage, and for making exertions for intermiſſions, where ſpontaneous criſes are not to be expected: and though what Celſus obſerves in fevers (Lib. III. Cap. 3.) often happens in hot climates, that the acceſſions are ſo confounded, that neither their coming on, nor their duration, can be correctly aſcertained, yet it ſeldom happens in continued fevers, that one, and oftener two exacerbations, are not perceived within the nycthemeron.

"Great caution is to be obſerved, when the yellowneſs, which

is critical, discovered in the eyes, on the third and fourth day, and a general suffusion over the whole body, that the same treatment is not pursued, which is necessary, where that appearance is symptomatical."—

"A *yellow suffusion* may be either *critical* or *symptomatical*. Critical, as Towne supposes, but it must be when there is a tranquil cessation, without languor, of all the other symptoms, with warm perspiration:—and symptomatical, as Hillary supposes, when accompanied with lassitude, nausea, or vomiting, colliquative sweats, and sunk pulse."

The author observes, that violent disputes have arisen between Towne and Hillary, concerning the application of *blisters* at this period of the fever. The former says, "Blisters are also of great moment and efficacy at this juncture, and are therefore not to be foreborne any longer. The bile being now afloat, is to be discharged by every out-let, *qua data porta ruit*. It is almost incredible what large quantities of this juice may be evacuated by the external use of cantharides; for their salts entering now, and mixing with the mass of blood, dissolve and attenuate the viscid particles, prevent the growing lentor, and, by their caustic quality, open the mouths of the vessels for their expulsion. Another great benefit we gain from blisters, is the tendency they have to the bladder, by which means another plentiful discharge of the redundant bile is obtained; for by the precipitating, if I may use the expression, those particles to the urinary organs, they throw off abundance of them by that secretion. I can affirm from experience, that when they have been applied before it is too late, a coma, the deadly symptom of this distemper, has very rarely ensued."

On the other hand, Hillary says, when speaking of their effects in this fever in particular:—"I have observed that the coma, tremors, subsultus tendinum, the coldness of the extreme parts, and the low pulse (though this sometimes has been rendered a little quicker, but not more full), has not only been increased thereby, and the hæmorrhage which usually attends the fever hastened on, or if come on before, it has been increased on their application; and I have seen a vesicatory which I ordered to be taken off, as I usually do as soon as I come, in this fever, that the part where it was laid was turned black, and perfectly sphacelated, and if the spine, and ends of the ribs had not hindered, a large square passage into the thorax would have been opened, if the patient had lived a few hours after it; but he died two hours after I came: and the reflection, that I have never ordered any vesicatories to be applied in this fever, and have always strictly forbidden their application in it, I must say, gives me great satisfaction."

"If blisters," says Dr. Moseley, "had that effect on the body which either of these physicians assert, they would certainly be improper in this fever;" but blisters are found to be a safe and

powerful remedy. Natives, and long reſidents in the Weſt-Indies, are ſeldom diſturbed by inflammatory diſeaſes; and bliſters can ſcarcely ever be applied amiſs. They form a drain for the acrid ſerum of the blood, and give a ſtimulus to the languid veſſels, which often keep up diſorders from debility, obſtruction, and irritability.

"If bleeding, purging, baths, and diaphoretics, do not remove the fever in its firſt ſtage:—

"If purging, baths, diaphoretics, and bliſters, do not remove it in the ſecond ſtage:—

"If the vomiting cannot be ſuppreſſed, and bark retained:—

"The *laſt ſtage* of the diſeaſe appears with its *direful vomiting*; which at firſt has generally the appearance of the grounds of coffee; then that of a ſlate colour; and then dark, thick, and grumous. The interior ſurfaces of the body are all oozing out blood into their cavities.—Every excretion is corrupted blood.

"I have ſeen people recover after the vomiting has reſembled coffee-grounds, when any purgative medicine, united with a decoction of bark, could be made to paſs downwards: the unnatural actions of the ſtomach were reſpited, and the ſtate of that organ, and the bowels, ſo relieved, that bark could be taken with effect, from the power of the internal abſorbents being reſtored, which had been ſubverted by inceſſant vomiting. For in this ſtate of the vomiting, the rupture of the interior veſſels is only partial, and the demolition of the ſtomach and inteſtinal tube only commencing; and though the proſpect is very gloomy, there are ſtill ſome rays of hope.

"But when this ſtate has continued for many hours, and the internal hæmorrhage becomes general, the ſtomach and bowels have loſt all power of reſtricting the blood-veſſels, the bond of union between the ſolids and fluids is diſſolved, and the vital principle is too much ſunk ever to be raiſed. Then black, gangrenous, mortified blood, is diſcharged upwards and downwards, and there are no hopes of life *.

"The application of bark and vinegar in baths, fomentations and cataplaſms; ſinapiſms and acrid cataplaſms to the feet; camphire, ſnake-root, and cordial antiſeptics; have been ſometimes of ſervice, even here, as many practitioners have ſaid: and therefore, though I am of a different opinion, they ſhould not be omitted."

Opium, raſhly adviſed by Hillary and ſome others, Dr. Moſeley conſiders a fatal medicine in this fever, on account of its inflammatory tendency.

The regimen he directs during the firſt three or four days, is—

* "Quibus per morbos acutos . . . . . bilis atra, aut velut ſanguis niger ſubi erit, ii poſtridie moriuntur." Hippocrat. Aphor. 23. Sect. 4.

" thin, ſoft, cooling drinks, emulſions, and chicken-broth. Theſe and medicines, will be as much as the ſtomach can ſuſtain, even were any thing elſe neceſſary. After the criſis, or after the firſt ſtage of the diſeaſe, panada, gruel, and ſago, are the moſt proper articles for nouriſhment; with the addition of a ſpoonful of Madeira wine, where the patient is weak, languid, and exhauſted. Wine cheriſhes the ſtomach, and acts as a cordial, mixed with theſe nouriſhments: but if it be given any other way, it affects the head, and heats the patient."

Genus VI. SYNOCHUS.

Synochus, *Sauv.* gen. 81. *Lin.* 13.
Lenta, *Lin.* 14.
Phrenitis, *Vog.* 11.
Febris continua putrida, *Boerh.* 730.

This is a contagious diſeaſe, being a complication of a ſynocha and typhus; for the deſcription and cure of which, we muſt of conſequence refer to what hath been already ſaid concerning theſe diſeaſes.

The *Hectic* Fever.

Hectica, *Sauv.* gen. 83. *Lin.* 24. *Vog.* 80. *Sag.* 684.

This diſeaſe is reckoned by Dr. Cullen to be merely ſymptomatic; as indeed ſeems very probable, ſince it very generally accompanies abſorptions of pus into the blood from internal ſuppurations, or indeed from ſuch as are external, provided they be very large or of a bad kind.

1. *Deſcription.*] The beſt, indeed, the only proper, deſcription of this diſorder we have is that by Dr. Heberden. According to him, the appearance of the hectic fever is not unlike that of the genuine intermittent, from which, however, the diſeaſe is very different in its nature, while at the ſame time it is much more dangerous. In the true intermittent, the three ſtages of cold, heat, and ſweat, are far more diſtinctly marked, the whole fit is much longer, the period which it obſerves is more conſtant and regular, and the intermiſſions are more perfect, than in the hectic fever. For in the latter, even in the cleareſt remiſſion, there is uſually a feveriſh quickneſs perceptible in the pulſe, which ſeldom fails to exceed the utmoſt limit of a healthy one by at leaſt ten ſtrokes in a minute.

The chillneſs of the hectic fever is ſometimes ſucceeded by heat, and ſometimes immediately by a ſweat without any intermediate

ſtate of heat. The heat will ſometimes come on without any remarkable chillneſs preceding; and the chillneſs has been obſerved to go off without being followed either by heat or ſweat. The duration of theſe ſtages is ſeldom the ſame for three fits together; and as it is not uncommon for one of them to be wanting, the length of the whole fit muſt vary much more than in the true intermittent; but in general it is much ſhorter.

A patient ſubjected to hectic fever is little or nothing relieved by the coming on of the ſweat; but is often as anxious and reſtleſs under it as during the chillneſs or heat. When the ſweat is over, the fever will ſometimes continue; and in the middle of the fever the chillneſs will return; which is a moſt certain mark of this diſeaſe.

The hectic fever will return with great exactneſs, like an intermittent, for two or perhaps three fits; but Dr. Heberden informs us, that he does not remember ever to have known it keep the ſame period for four fits ſucceſſively. The paroxyſm will now and then keep off for ten or twelve days; and at other times, eſpecially when the patient is very ill, it will return ſo frequently on the ſame day, that the chillneſs of a new fit will follow immediately the ſweat of the former. It is not unuſual to have many threatenings of a ſhivering in the ſame day; and ſome degree of drowſineſs is apt to attend the ceſſation of a fit.

The urine in a true intermittent is clear in the fits and turbid in the intervals; but in the hectic fever it is liable to all kinds of irregularity. It will be equally clear or turbid in both ſtages, or turbid in the fits and clear in the intervals; and ſometimes it will be, as in a true intermittent, clear during the fever, and thick at the going off.

Hectic patients often complain of pains like thoſe of the rheumatiſm; which either affect by turns almoſt every part of the body, or elſe return conſtantly to the ſame part; which is often at a great diſtance from the ſeat of the principal diſorder, and, as far as is known, without any peculiar connection with it. Thoſe pains are ſo violent in ſome patients, as to require a large quantity of opium. As far as Dr. Heberden has obſerved, they are moſt common where the hectic ariſes from ſome ulcer open to the external air, as in cancers of the face, breaſt, &c. Joined with this fever, and ariſing probably from one common cauſe, he has been ſurpriſed to ſee ſwellings of the limbs, neck, or trunk of the body, riſe up almoſt in an inſtant, as if the part was all at once grown fatter. Theſe ſwellings are not painful, hard, or diſcoloured, and they continue for ſeveral hours.

Dr. Heberden has ſeen this fever attack thoſe who ſeemed in tolerable health, in a ſudden and violent manner, like a common inflammatory one; and like that, alſo, in a very ſhort time bring them into imminent danger of their lives; after which it has begun

to abate, and to afford hopes of a perfect recovery. But though the danger might be over for the present, and but little of a fever remain; yet that little has soon demonstrated, that it was kept up by some great mischief within, and, proving unconquerable by any remedies, has gradually undermined the health of the patient, and never ceased except with his life. This manner of its beginning, however, is extraordinary. It much oftener dissembles its strength at first; and creeps on so slowly, that the subjects of it, though they be not perfectly well, yet for some months hardly think themselves ill; complaining only of being sooner tired with exercise than usual, of want of appetite, and of falling away. But gentle as the symptoms may seem, if the pulse be quicker than ordinary, so as to have the artery to beat ninety times and perhaps 120 times in a minute, there is the greatest reason to be apprehensive of the event. In no disorder, perhaps, is the pulse of more use to guide our judgment than in the hectic fever; yet even here we must be upon our guard, and not trust entirely to this criterion; for one in about twenty patients, with all the worst signs of decay from some incurable cause, which irresistibly goes on to destroy his life, will show not the smallest degree of quickness, nor any other irregularity of the pulse, to the day of his death.

Mr. Hunter considers this disease as one of the remote constitutional sympathetic affections, arising from an origin very different from the other sympathizing effects which he has described in his Treatise on the Blood, &c.

"When it is a consequence," says he, "of a local disease, it has commonly been preceded by the first process of the former, viz. inflammation and suppuration, but has not been able to accomplish granulation and cicatrization, so as to complete the cure. It may be said to be a constitution now become affected with a local disease or irritation, which the constitution is conscious of, and of which it cannot relieve itself, and cannot cure; for while the inflammation lasts, which is only preparatory, and an immediate effect of most injuries, and in parts which can only affect the constitution, so as to call up its powers, there can be no hectic.

"We should distinguish well between a hectic arising from a local complaint entirely, where the constitution is good, but only disturbed by too great an irritation; and a hectic arising principally from the badness of the constitution, which does not dispose the parts for a healing state; for in the first it is only necessary to remove the part (if removable), and then all will do well; but in the other we gain nothing by a removal, except the wound made by the operation is much less, and much more easily put into a local method of cure; so that this bad constitution falls less under this (the operation taken into the account) than under the former state; but all this depends on nice discrimination.

"The hectic comes on at very different periods after the inflam-

mation, and commencement of ſuppuration, owing to a variety of circumſtances. Firſt, ſome conſtitutions much more eaſily fall into this ſtate than others, having leſs powers of reſiſtance. The quantity of incurable diſeaſe muſt be ſuch as can affect the conſtitution, and in whatever ſituation, or whatever parts, it will be always as to the quantity of diſeaſe in thoſe ſituations or parts in the conſtitution, which will make the time to vary very conſiderably. In many diſeaſes it would appear, from the manner of coming on, that they retard the commencement of the hectic, ſuch as lumbar abſceſſes. But when ſuch abſceſſes are put into that ſtate, in which the conſtitution is to make its efforts towards a cure, but is not equal to the taſk, then the hectic commences."

2. *Cauſes*, &c.] This fever will ſupervene whenever there is a great collection of matter formed in any part of the body; but it more particularly attends upon the inflammation of a ſchirrhous gland, and even upon one that is ſlight and only juſt beginning; the fever growing worſe in proportion as the gland becomes more inflamed, ulcered, or gangrenous. And ſuch is the lingering nature of thoſe glandular diſorders, that the firſt of thoſe ſtages will continue for many months, and the ſecond for ſome years.

If this ſcirrhous inflammation be external, or in the lungs, or ſome of the abdominal viſcera, where the diſturbance of their functions plainly points out the ſeat of the diſorder, no doubt can be entertained concerning the cauſe of the fever. But if the part affected be not obvious to the ſenſes, and its preciſe functions be not known, the hectic, which is there only part of the train of another diſeaſe, may be miſtaken for the primary or only one.

Lying-in women, on account of the violence ſuſtained in delivery, generally die when affected with this fever. Women of the age of near fifty and upwards are particularly liable to it. For, upon the ceſſation of their natural diſcharge, the glands of the breaſts, ovaries, or womb, too commonly begin to grow ſcirrhous, and proceed to be cancerous. Not only theſe, but the glandular parts of all the abdominal viſcera, are diſpoſed to be affected at this particular time, and to become the ſeats of incurable diſorders.

The injuries done to the ſtomach and liver by hard drinking are attended with ſimilar ſymptoms, and terminate in the ſame manner.

Dr. Heberden obſerves, that the ſlighteſt wound by a fine-pointed inſtrument is known upon ſome occaſions to bring on the greateſt diſturbance, and the moſt alarming ſymptoms, nay even death itſelf. For not only the wounded part will ſwell and be painful, but by turns almoſt every part of the body; and very diſtant parts have been known to come even to ſuppuration. Theſe ſymptoms are conſtantly accompanied with this irregular intermittent, which laſts as long as any of them remain.

Mr. Hunter, ſpeaking of the cauſe of hectic fever ſays, "it takes its riſe from a variety of cauſes, but which I ſhall divide into two ſpecies, with regard to diſeaſed parts, viz. the parts *vital*, and the parts *not vital*. The only difference between theſe two is, probably, merely in time, with reſpect to its coming on, and its progreſs when come on: but what is very ſimilar to the diſeaſe of a vital part, is quantity of incurable diſeaſe.

"The cauſes of hectic, ariſing from diſeaſes of the vital parts, may be many, of which a great proportion would not produce the hectic if they were in any other part of the body; ſuch, for inſtance, as the formation of tumors, either in, or ſo as to preſs upon ſome vital part, or a part whoſe functions are immediately connected with life. Schirri in the ſtomach, meſenteric glands, which tumors anywhere elſe would not produce the hectic; many complaints too of vital parts, as diſeaſed lungs, liver, &c. all of theſe produce the hectic, and much ſooner than if the parts were not vital. In many caſes where thoſe cauſes of the hectic come on quickly, it frequently follows ſo quick upon the ſympathetic fever, that the one ſeems to run into the other: this I have often ſeen in the lumbar abſceſs. They alſo produce ſymptoms according to the nature of the part injured, as coughs, when in the lungs; ſickneſs and vomiting, when in the ſtomach; and probably bring on many other complaints, as dropſies, jaundice, &c. but which are not peculiar to the hectic.

"When the hectic ariſes from a diſeaſe in a part not vital, it ſooner or later commences, according as it is in the power of the parts to heal, or continue the diſeaſe. If far from the ſource of the circulation, with the ſame quantity of diſeaſe, it will come on ſooner. When in parts not vital, it is generally in thoſe parts where ſo great a quantity of diſeaſe can take place (without the power of being diminiſhed in ſize, as is the caſe with the diſeaſes in moſt joints) as to affect the conſtitution, and alſo in ſuch parts as have naturally but little powers to heal; we muſt at the ſame time include parts that are well-diſpoſed to take on ſuch ſpecific diſeaſes as are not readily cured in any ſituation; ſuch parts are principally the larger joints, both of the trunk and extremities; but in the ſmall joints of the toes and fingers, although the ſame local effects take place, as in the larger, yet the conſtitution is not made ſenſible of it; we therefore find a ſcrofulous joint of a toe or finger going on for years, without affecting the conſtitution.

"The ankle, wriſt, elbow, and even the ſhoulder, may be affected much longer than either the knee, hip-joint, or loins, before the conſtitution ſympathizes with their want of powers to heal.

"Although the hectic commonly ariſes from ſome incurable local diſeaſe of a vital part, or of a common part when of ſome magnitude, yet it is poſſible for it to be an original diſeaſe in the

conſtitution: the conſtitution may fall into the ſame mode of action, without any local cauſe whatever, at leaſt that we know of.

"Hectic may be ſaid to be a ſlow mode of diſſolution: the general ſymptoms are thoſe of a low, or ſlow fever, attended with weakneſs, but more with the action of weakneſs than real weakneſs; for, upon the removal of the hectic cauſe, the action of ſtrength is immediately produced, as well as every natural function, however much it was decreaſed before.

"The particular ſymptoms are debility; a ſmall, quick, and ſharp pulſe; the blood forſaking the ſkin; loſs of appetite; often rejection of all aliment by the ſtomach; waſting; a great readineſs to be thrown into ſweats; ſweating ſpontaneouſly when in bed; frequently a conſtitutional purging; the urine clear.

"This diſeaſe has been, and is ſtill in general laid to the charge of the abſorption of pus into the conſtitution from a ſore; but I have long imagined that an abſorption of pus has been too much blamed as the cauſe of many of the bad ſymptoms which frequently attack people who have ſores.

"*Firſt*, this ſymptom almoſt conſtantly attends ſuppuration when in particular parts, ſuch as the vital parts, as well as many inflammations before actual ſuppuration has taken place, as in many of the larger joints, called white ſwellings; while the ſame kind and quantity of inflammation and ſuppuration in any of the fleſhy parts, and eſpecially ſuch of them as are near the ſource of the circulation, have in general no ſuch effect; in thoſe caſes, therefore, it is only an effect upon the conſtitution produced by a local complaint, having a peculiar property, which I ſhall now conſider.

"I obſerved, that with all diſeaſes of vital parts, the conſtitution ſympathized more readily than with diſeaſes of any other parts; and alſo, that all diſeaſes of vital parts are more difficult of cure in general than thoſe which are not vital. I have obſerved, likewiſe, that all the diſeaſes of bones, ligaments, and tendons, affected the conſtitution more readily than thoſe of muſcles, ſkin, cellular membrane, &c. and we find that the ſame general principles are followed in the univerſal remote ſympathy, produced by local diſeaſes of thoſe parts.

"When the diſeaſe is in vital parts, and is ſuch as not to kill by its firſt conſtitutional effects, the conſtitution then becomes teaſed with a complaint which is diſturbing the neceſſary actions of health, the parts being vital; there is, beſides, the univerſal ſympathy with a diſeaſe which gives the irritation of being incurable.

"In the large joints it continues to haraſs the conſtitution with a diſeaſe, where the parts have no power, or, what is more probable, have no diſpoſition to produce a ſalutary inflammation and ſuppuration; the conſtitution, therefore, is alſo irritated with an incurable diſeaſe."

Mr. Hunter having given this as the *theory of the cauſe of the hectic*, proceeds to conſider how far the abſorption of matter may be juſtly ſuppoſed a cauſe of the diſeaſe.

"If," ſays he, "the abſorption of matter always produced ſuch ſymptoms, I do not ſee how any patient, who has a large ſore, could poſſibly eſcape this diſeaſe; becauſe we have as yet no reaſon to ſuppoſe, that any one ſore has more power of abſorption than another.

"If in thoſe caſes where there is an hectic conſtitution, the abſorption is really greater than when the habit is healthy, it will be difficult to determine whether this increaſe of abſorption is a cauſe, or an effect.

"If it be a cauſe, it muſt ariſe from a particular diſpoſition in the ſore to abſorb more at one time than common, even while it was in a healthy ſtate; for the ſore muſt be healthy and then abſorb, which hurts the conſtitution; moreover, as the ſore is a part of that conſtitution, it muſt of courſe be affected in turn; and what reaſon we have to ſuppoſe that a healthy ſore of a healthy conſtitution ſhould begin to abſorb more at one time than another, I muſt own I cannot diſcover. If this increaſe of abſorption does not depend upon the nature of the ſore, it muſt then take its riſe from the conſtitution; and if ſo, there is then a peculiarity in the conſtitution, ſo that the whole of the ſymptoms cannot ariſe entirely from the abſorption of matter as a cauſe, but muſt depend on a peculiar conſtitution, and abſorption combined.

"If abſorption of matter produced ſuch violent effects as are commonly aſcribed to it (which, indeed, are never of the inflammatory kind, but of the hectic), why does not the venereal matter do the ſame? We often know that abſorption is going on by the progreſs of buboes; and I have known a large bubo, which was juſt ready to break, abſorbed from a few days' ſickneſs at ſea, while the perſon continued at ſea for twenty-four days after; yet, in ſuch caſes, no ſymptoms appear till the matter begins to have its ſpecific effects, and theſe very ſymptoms are not ſimilar to thoſe which are called hectic. From reaſoning, we ought to expect that the venereal matter would act with greater violence than the common matter from a healthy ſore. Although matter too is frequently formed on the inſide of the veins, in caſes of inflammation of their cavities, and this matter cannot fail of getting into the circulation, yet in theſe caſes we have not the hectic diſpoſition, but only the inflammatory, and ſometimes death. We likewiſe find very large collections of matter, which have been produced without viſible inflammation, ſuch as many of the ſcrofulous kind, and which are wholly abſorbed, even in a very ſhort time, yet no bad ſymptoms follow.

"We may, therefore, from hence conclude, that *the abſorption of pus* from a ſore into the circulation, *cannot be a cauſe* of ſo much miſchief as is generally ſuppoſed; and if it was owing to matter in

the conſtitution, I do not ſee how theſe ſymptoms could ever ceaſe, till ſuppuration ceaſed, which does not readily happen in ſuch conſtitutions, their ſores being tedious in healing. We find, however, that ſuch patients often get well of the hectic before ſuppuration ceaſes, even when no medicine was given; and in the caſe of veins, there is great reaſon to believe, that after all the bad ſymptoms are removed, ſuppuration is ſtill going on, as we find it ſo in a ſore; pus may, therefore, ſtill paſs into the conſtitution from the veins, and yet the hectic may not be produced, which would certainly be the caſe if thoſe bad ſymptoms were occaſioned by the matter getting into the circulation."

Mr. Hunter, however, very much doubts the fact of abſorption going on more in one ſore than another; and even if it does he thinks it of no conſequence. "I am," ſays he, "much more inclined to believe, that this hectic diſpoſition ariſes from the effect which irritation of a vital organ, and ſome other parts, ſuch as joints (being either incurable in themſelves, or being ſo to the conſtitution for a time), have on the conſtitution.

"We may remark, that in large abſceſſes which have not been preceded by inflammation, the hectic diſpoſition ſeldom or never comes on till after they are opened (although they may have been forming matter for months); but in ſuch caſes, the diſpoſition often comes on ſoon after opening, and in others, very late. Till the ſtimulus for reſtoring parts is given, no ſuch effect can take place; and if the parts are well diſpoſed to heal, no hectic diſpoſition comes on, neither is the conſtitution at all affected. In diſeaſed joints alſo, which are attended with inflammation, if the parts were capable of taking on a ſalutary inflammation, we ſhould have only the firſt ſympathetic fever; but as they ſeldom are capable of doing this, the conſtitution becomes teaſed with a complaint, not taking on the immediate and ſalutary ſteps towards a cure. In the venereal diſeaſe too, where we know that the venereal matter has got into the conſtitution, and that the matter is producing its ſpecific effects, yet no hectic comes on, till the conſtitution is haraſſed with an incurable diſeaſe, and this not till long after all the parts are healed, with regard to recent diſeaſe, and no matter is formed for further abſorption. That abſorption does take place in ſores, we have reaſon to believe, and upon this fact a mode of dreſſing ſores has been adviſed. The following is a remarkable inſtance of it in a bubo: A young man had a chancre and three buboes, one of which appeared when the other two were almoſt cured. This was very large, and at the bottom of the belly. When it had ſuppurated, and was pretty near breaking, it diminiſhed very quickly, and in two or three days was entirely gone. While this was going on, he obſerved his urine whey-iſh and thick, while making it, which went entirely off when the bubo had ſubſided. Before the bubo began to ſubſide, he was rather mending

in his health, which continued to mend, nor did the diminution of the bubo alter the ſtate of his health.

" The hectic, from what has been ſaid, appears in ſome meaſure to depend on the parts being ſtimulated to produce an effect which is beyond their powers: that this ſtimulus is ſooner or later in taking place in different caſes, and that the conſtitution becomes affected by it. The hectic diſpoſition ariſes from diſeaſed lungs, lumbar abſceſſes, white ſwellings, ſcrofulous joints, &c."

3. *Prognoſis.*] This anomalous fever is never leſs dangerous than when it belongs to a kindly ſuppuration, into which all the diſeaſed parts are melted down, and for which there is a proper outlet.

The ſymptoms and danger from ſome ſmall punctures, with their concomitant fever, moſt frequently give way in a few days; though in ſome perſons they have continued for two or three months, and in others have proved fatal.

The inflammation of internal ſcirrhous glands, or of thoſe in the breaſts, ſometimes goes off, and the fever, which depended upon it, ceaſes; but it much oftener happens, that it proceeds to cancerous and gangrenous ulcers, and terminates only in death. Death is alſo, almoſt univerſally, the conſequence of hectic fever from tubercles of the lungs, which have in general at leaſt been conſidered as glandular bodies in a ſcirrhous ſtate.

On the termination of this diſeaſe, Mr. Hunter ſays, " If the local diſeaſe does not or cannot heal, and is ſuch as to affect the conſtitution, it then brings on the hectic, and ſooner or later diſſolution takes place; for the hectic is an action of diſeaſe, and of a particular kind; but diſſolution is giving way to diſeaſe of every kind, therefore has no determined form ariſing from the nature of the preceding diſeaſe.

" It has been ſuppoſed," continues Mr. Hunter, " that this diſeaſe ariſes from the abſorption of matter. It appears to be in many caſes an effect ariſing from violent and long-continued inflammations and ſuppurations, although not incurable in themſelves (therefore, in theſe reſpects, not ſimilar to the hectic); and which in many inſtances are known to produce the greateſt changes in the conſtitution. Such often ariſe from very bad compound fractures, from amputations of the extremities, eſpecially the lower, and more particularly the thigh, in which caſes the ſympathetic fever has run high, which would appear to be neceſſary, or preparatory; but in the hectic, it is not neceſſary that the conſtitution ſhould have ſuffered at all in the firſt ſtages of the diſeaſe; diſſolution ſeems to be more connected with what is paſt, than with the preſent alone, which is the reverſe of the hectic. We never find this diſeaſe take place in conſequence of ſmall wounds, or ſuch wounds as have affected the conſtitution but little in its firſt ſtages; but which may affect the conſtitution much in its ſecond, ſuch as ſmall wounds producing the locked jaw. It would appear

to take place in our hoſpitals more generally than in private houſes, and more readily in large cities than in the country. We ſhall find that the hectic and this are by no means the ſame diſeaſe, differing exceedingly in their cauſes, and in many of their effects; for in the caſes of compound fractures and amputations we find the conſtitution often capable of going through the inflammatory and ſympathetic fever, producing ſuppuration and granulation, as well as continuing the production of theſe for ſome time, yet ſinking under them at laſt, and often immediately, without a ſeeming cauſe. This effect will more readily take place, if the perſon was in full health before the accident or operation, than if he had been ſomewhat accuſtomed to the other, or true hectic; for the ſymptoms of diſſolution ſeldom or never take place, if the violence committed has been to get rid of a hectic cauſe. It ſometimes takes place early, in conſequence of local injury, and would ſeem to be a continuation of the ſympathetic fever; as if the conſtitution was not able to relieve itſelf of the general affection, or that the parts could not go into the true ſuppurative diſpoſition. We ſee this frequently after removing a limb, eſpecially in the lower extremity, and after cutting for the ſtone in very fat men, above the middle age, and who have lived well.

"The firſt ſymptoms are generally thoſe of the ſtomach, which produce ſhivering: vomiting immediately follows, if not an immediate attendant; there is great oppreſſion and anxiety, the perſons conceiving they muſt die. There is a ſmall quick pulſe; perhaps bleeding from the whole ſurface of the ſore, often mortification, with every ſign of diſſolution in the countenance; as it ariſes with the ſymptoms of death, its termination is pretty quick. Here is a very fatal diſeaſe taking place; in ſome almoſt immediately, when all appeared to be within the power of the machine, and therefore cannot immediately ariſe from the ſore itſelf; for it is very common after ſuch operations as uſually do well; but the hectic always takes place in conſequence of thoſe ſores which ſeldom or never get well in any caſe; yet the ſore certainly aſſiſts in bringing on diſſolution, becauſe we never ſee the diſeaſe take place when the ſore is healed, nor in thoſe where the conſtitution ſeems not to be equal to the taſk, as is the cauſe of the hectic.

"The hectic is much ſlower in its progreſs, and ſeems to be a ſimple and an immediate effect, ariſing from a continued cauſe which is local; by removing the cauſe, therefore, the effect ceaſes, and the havock made on the conſtitution is ſoon reſtored; perſons, therefore, do much better in conſequence of the hectic having in ſome degree taken place, prior to the removal of the cauſe. But diſſolution is a change of the conſtitution in conſequence of cauſes which now do not wholly exiſt, and in many caſes it does not take place till the conſtitution appears to be capable eaſily of performing all its functions, and a removal of the parts does not relieve, as

in the hectic; for diſſolution does not depend for its continuance upon the preſence of the diſeaſe.

"Death or diſſolution appears not to be going on equally faſt in every vital part; for we ſhall have many people very near their termination, yet ſome vital actions ſhall be good, and tolerably ſtrong; and if it is a viſible action, and life depends much upon this action, the patients ſhall not appear to be ſo near their end as they really are: thus I have ſeen dying people whoſe pulſe was full and ſtrong as uſual, on the day previous to their death, but it has ſunk almoſt at once, and then become extremely quick, with a thrill: on ſuch occaſions it ſhall riſe again, making a ſtrong effort, and after a ſhort time, a moiſture ſhall probably come on the ſkin, which ſhall in this ſtate of pulſe be warm; but upon the ſinking of the pulſe, ſhall become cold and clammy: breathing ſhall become very imperfect, almoſt like ſhort catchings, and the perſon ſhall ſoon die."

Mr. Hunter has obſerved that, in many caſes, diſeaſe produces ſuch weakneſs as at laſt to deſtroy itſelf: nay even that the ſymptoms or conſequences of the diſeaſe diſappear before death. He illuſtrates this by the following curious caſe:

"A gentlewoman, who was above ſeventy-five, was anaſarcous all over: the abdomen was very full and large; ſhe made but very little water; her breathing was ſo difficult as to make her purple in the face, ſo that moſt probably there was water in the cheſt; her pulſe was extremely irregular; fluttering, trembling, intermitting, and ſmall. Her legs were punctured with a lancet, and diſcharged very freely for more than three weeks, which emptied the cellular membrane of the body, as well as in ſome degree the abdomen; the breathing became free and eaſy, ſo that we ſuppoſed the water in the cheſt was abſorbed; the pulſe became regular, ſoft, and fuller, and the appetite in ſome degree mended; in which ſtate ſhe ſeemed free from diſeaſe, having only ſome of the conſequences ſtill remaining. The quantity of urine increaſed to the natural ſecretion; but notwithſtanding actual diſeaſe ſeemed to be gone, yet ſhe became weaker and weaker, in which ſtate ſhe exiſted for near a month, and died. Some days prior to death, a purple and then a livid appearance came upon the legs, with ſome ſpots of extravaſated blood where the punctures had been made, on which bliſters aroſe, at firſt filled with ſerum, then with bloody ſerum, all of them threatening mortification.

"Even when in the ſtate of approaching death, we often find a ſoft, quiet, and regular pulſe, having not the leaſt degree of irritability in it, and this when there is every other ſign of approaching death; ſuch as entire loſs of appetite, no reſt, hickup, the feet cold, and partial, cold, clammy ſweats, &c.

"A lady appeared to have loſt all diſeaſed action, only the con-

ſequences of diſeaſe remaining, viz. weakneſs, with ſwelled legs: ſhe made little or no water: at length ſhe became ſo weak, as hardly to articulate; ſhe lay in a kind of doze, was only rouſed to impreſſion, and only took food by ſpoonsful when deſired; the pulſe ſo ſmall as hardly to be felt: her extremities were cold, and ſhe had all the ſigns of approaching diſſolution, which took place; yet within thirty-ſix hours before ſhe died, the whole water in her legs and thighs was taken up, her urine increaſed, and about ten hours previous to her death, the legs, &c. were as ſmall as ever. As I conſider the dropſy to be a diſeaſe, and not ſimply weakneſs, which this caſe would in ſome meaſure ſhew from the reſult, I ſhould wiſh to aſk, whether the abſorption of water was not owing to the diſeaſe being gone, and whether the diſeaſe being gone, the abſorbents did not ſet to work? If ſo, then diſſolution may be a ceſſation of diſeaſe, and perſons die of weakneſs ſimply; or ſimply, either the want of powers to act, or the want of that ſtimulus of neceſſity to act, by which means a ceſſation of action takes place."

4. *Cure.*] It is not to be expected that the ſame remedies will in every caſe be adapted to a fever which, ariſing from very different cauſes, is attended with ſuch a variety of ſymptoms. Dr. Heberden obſerves, that a mixture of aſafœtida and opium has in ſome perſons ſeemed ſingularly ſerviceable in this fever, when brought on by a ſmall wound; but in moſt other caſes the principal, if not the ſole attention of the phyſician muſt be employed in relieving the ſymptoms, by tempering the heat, by preventing both coſtiveneſs and purging, by procuring ſleep, and by checking the ſweats. If, at the ſame time, he put the body into as good general health as may be, by air, exerciſe, and a proper courſe of mild diet, he can perhaps do nothing better than to leave all the reſt to nature. In ſome few fortunate patients, nature appears to have ſuch reſources, as may afford reaſon for entertaining hopes of cure, even in very bad caſes. For ſome have recovered from this fever attended with every ſymptom of an abdominal viſcus incurably diſeaſed, after all probable methods of relief from art had been tried in vain, and after the fleſh and ſtrength were ſo exhauſted as to leave ſcarce any hopes from nature. In thoſe deplorable circumſtances, there has ariſen a ſwelling not far from the probable ſeat of the diſorder, and yet without any diſcoverable communication with it. This ſwelling has advanced to an abſceſs; in conſequence of which the pulſe has ſoon returned to its natural ſtate, as have alſo the appetite, fleſh, and ſtrength. What nature has performed in thoſe rare caſes, Dr. Heberden acquaints us, he has often endeavoured to imitate, by making iſſues or applying bliſters near the ſeat of the diſeaſe; but he cannot ſay with the ſame ſucceſs.

It ſeems at preſent, Dr. Heberden obſerves, the opinion of many practitioners, that the gangrene will be ſtopped, and ſuppuration

become more kindly, by the uſe of Peruvian bark; and therefore this remedy is always either adviſed or permitted in the irregular fever joined with ſuppurations and gangrenes. But he affirms he does not remember ever to have ſeen any good effect from the bark in this fever unattended with an apparent ulcer; and even in gangrenes it ſo often fails, that in ſucceſsful caſes, where it has been adminiſtered, there muſt be room for ſuſpicion that the ſucceſs was owing to another cauſe. Dr. Heberden acknowledges at the ſame time, that he never ſaw any harm from the bark, in theſe, or indeed in any other caſes, except a ſlight temporary purging or ſickneſs, where it has happened to diſagree with the ſtomach, or where the latter has been loaded by taking the medicine too faſt, eſpecially in dry boluſes wrapped in wafer-paper.

In hectic illneſſes, where all other means have proved ineffectual, a journey to Bath is uſually propoſed by the friends, and wiſhed for by the ſick; but Dr. Heberden juſtly obſerves, that, beſides the fatigue and many inconveniences of a journey to a dying perſon, the Bath waters are peculiarly hurtful in this fever, which they never fail to increaſe, and thereby aggravate the ſufferings and haſten the death of the patient.

Mr. Hunter deſcribes the treatment of hectic in the following way: "We have as yet, I am afraid," ſays he, "no cure for any of the conſequences above related; I believe that depends on the cure of the cauſe, viz. the local complaint, or in its removal; the effects, I fear, are not to be cured. Strengtheners, and what are called antiſeptics, are recommended."

On the claſs of medicines called ſtrengtheners, which are propoſed to counteract the debility which has taken place, the author has no great reliance.

"Antiſeptics," he ſays, "have been employed from an idea that pus, when abſorbed, gives the blood a tendency to putrefaction. To prevent both of theſe effects from taking place, the ſame medicines are however recommended. Theſe are bark and wine.

"Bark will, in moſt caſes, only aſſiſt in ſupporting a conſtitution. I ſhould ſuppoſe it impoſſible to cure a diſeaſe of the conſtitution till the cauſe be removed; however, it may be ſuppoſed that theſe medicines may make the conſtitution leſs ſuſceptible of the diſeaſe, and may alſo contribute to leſſen the cauſe, by diſpoſing the local complaints to heal: but where the hectic ariſes from ſpecific diſeaſe, as for inſtance, if a hectic diſpoſition comes on from a venereal diſpoſition, bark will enable the conſtitution to ſupport it better than it otherwiſe could have done, but can never remove it."

Wine, Mr. Hunter apprehends, rather does harm if it increaſes the actions of the machine without giving ſtrength, which is a thing carefully to be avoided. He ſays farther,

"When the hectic arises from local diseases, in such parts as the constitution can bear a removal of, then the diseased part should be removed, viz. when it arises from some incurable disease in an extremity, although all the symptoms above described should have already taken place, we shall find, that upon a removal of the limb, the symptoms will abate almost immediately. I have known a hectic pulse at one hundred and twenty sink to ninety in a few hours, upon the removal of the hectic cause. I have known persons sleep sound the first night without an opiate, who had not slept tolerably for weeks before. I have known cold sweats stop immediately, as well as those called colliquative. I have known a purging immediately stop, upon the removal of the hectic cause, and the urine drop its sediment. It is possible too, that the pain in the operation, and the sympathetic affection of the constitution, may assist in these salutary effects. It is an action diametrically opposite to the hectic, and may be said to bring back the constitution to a natural state."

Order II. PHLEGMASIÆ.

Phlegmasiæ membranosæ et parenchymatosæ, *Sauv.* Class III. Ord. I. II. *Sag.* 605.
Morbi febriles phlogistici, *Lin.* Class III.
Febres continuæ compositæ inflammatoriæ, V.
Morbi acuti febriles, *Boerh.* 770.
Febres inflammatoriæ, *Hoff.* II. 105. *Junck.* 61.

The phlegmasiæ, or topical inflammations, are a very numerous assemblage of diseases. Their great characteristics are, the general symptoms of fever, and a topical inflammation attended with the interruption of some important function. And in most instances, when blood is drawn, it is found upon coagulation to be covered with a buffy coat. Under this order, many important genera are comprehended, each requiring a separate consideration.

Genus VII. PHLOGOSIS.

Sp. I. Phlogosis phlegmone.

Phlegmone auctorum, *Sauv.* gen. 15. *Lin.* 39. *Vog.* 351.
Inflammatio, *Lin.* 231. *Boerh.* 370. *Junck.* 20.

This disease is a synocha fever, accompanied with an inflammation of some particular part either external or internal, and consequently it varies very much in its form and the degree of danger

attending it according to the ſituation and functions of the part affected with topical inflammation. To this ſpecies, therefore, belong the following diſeaſes:

Furunculus, *Sauv.* gen. 18. *Vog.* 352.
Terminthus, *Vog.* 381.
Pupula, *Lin.* 275. *Sauv.* p. 6.
Varus, *Vog.* 436. *Lin.* 269. *Sauv.* p. 7.
Bacchia, *Lin.* 270.
Gutta Roſea, *Sauv.* gen. 4.
Gutta roſacea, *Vog.* 437.
Hordeolum, *Sauv.* gen. 27. *Lin.* 276. *Vog.* 434.
Otalgia, *Sauv.* gen. 197. *Lin.* 44. *Vog.* 148.
Dolor otalgicus, *Hoffm.* II. 336.
Parulis, *Vog.* 362.
Maſtodynia, *Sauv.* gen. 210. *Vog.* 153.
Paronychia, *Sauv.* gen. 21. *Lin.* 258. *Vog.* 345.
Arthrocace, *Sauv.* gen. 78. *Lin.* 256.
Pædarthrocace, *Vog.* 419.
Spina ventoſa, *Boerh.* 526.
Phimoſis, *Sauv.* gen. 22. *Lin.* 297. *Vog.* 348.
Paraphimoſis, *Vog.* 349.

On the cure of inflammations, we ſhall ſpeak at large in our ſecond volume. We ſhall here however obſerve, that Dr. Cullen lays down the following indications. 1. To remove the remote cauſes when they are evident and continue to operate. 2. To take off the phlogiſtic diatheſis affecting the whole ſyſtem, or the particular part. 3. To take off the ſpaſm of the particular part by remedies applied to the whole ſyſtem, or to the part itſelf.

The means of removing the remote cauſes will readily occur, from conſidering the particular nature and circumſtances of the different kinds. Acrid matters muſt be removed, or their action muſt be prevented by the application of demulcents. Compreſſing and overſtretching powers muſt be taken away; and from their ſeveral circumſtances, the means of doing ſo will be obvious.

The means of taking off the phlogiſtic diatheſis of the ſyſtem are the ſame with thoſe already mentioned under the cure for ſynocha. The means of taking off the ſpaſm alſo from the particular part, are much the ſame with thoſe already mentioned. Only it is to be remembered, that topical bleedings, ſuch as cupping with ſcarifications, applying leeches, &c. are in this caſe much more indicated; and that ſome of the other remedies are to be directed more particularly to the part affected, as ſhall be more fully conſidered when we treat of thoſe diſeaſes attended with particular inflammations.

When a tendency to ſuppuration is perceived, the proper indication is to promote the production of perfect pus as much as poſſible. For this purpoſe, various remedies, ſuppoſed to poſſeſs a ſpecific power, have been propoſed: but it does not appear that any of them are poſſeſſed of a virtue of this kind; and, in Dr. Cullen's opinion, all that can be done is to favour the ſuppuration by ſuch applications as may ſupport a moderate heat in the part, by ſome tenacity confine the perſpiration, and by an emollient quality may weaken the coheſion of the teguments, and favour their eroſion. As all abſceſſes are occaſioned by the effuſion of fluids, and as, in the caſe of certain effuſions, a ſuppuration becomes not only unavoidable but deſirable, it may be ſuppoſed that moſt of the means of procuring a reſolution by diminiſhing the force of the circulation, &c. ought to be avoided. But as we obſerve on the one hand, that a certain degree of increaſed impetus, or of the original ſymptoms of inflammation, is neceſſary to produce a proper ſuppuration; ſo it is then eſpecially neceſſary to avoid thoſe means of reſolution which may diminiſh too much the force of circulation. And on the other hand, as the impetus of the blood, when violent, is found to prevent the proper ſuppuration; ſo, in ſuch caſes, though a tendency to ſuppuration may have begun, it may be proper to continue thoſe means of reſolution which moderate the force of the circulation. The opening of abſceſſes when completely formed is the particular buſineſs of the ſurgeon; upon that ſubject therefore it is not neceſſary we ſhould enlarge.

When an inflammation has taken a tendency to gangrene, that event is to be prevented by every poſſible means; and theſe muſt be different according to the nature of the ſeveral cauſes; but after a gangrene has in a great degree taken place, it can be cured only by the ſeparation of the dead from the living parts. This in certain circumſtances can be performed, and moſt properly, by the knife. In other caſes it can be done by exciting a ſuppuratory inflammation on the verge of the living part, whereby its coheſion with the dead part may be every-where broken off, ſo that the latter may fall off by itſelf. While this is doing, it is proper to prevent the further putrefaction of the part, and its ſpreading wider. For this purpoſe, various antiſeptic applications have been propoſed: but Dr. Cullen is of opinion, that while the teguments are entire, theſe applications can hardly have any effect; and therefore, that the fundamental procedure muſt be to ſcarify the part ſo as to reach the living ſubſtance, and by the wounds made there, to excite the ſuppuration required. By the ſame inciſions alſo we give acceſs to antiſeptics, which may both prevent the progreſs of the putrefaction in the dead, and excite the inflammation neceſſary in the living parts. The propriety of this, however, is doubtful.

The other terminations of inflammation either do not admit of

any treatment except that of preventing them by reſolution, or excluſively belong to *Surgery*.

Sp. II. Phlogosis erythema.

Erythema, *Sauv.* gen. 11.
Eryſipelas auctorum, *Vog.* 343.
Hieropyr, *Vog.* 344.
Anthrax, *Sauv.* gen. 19. *Lin.* 272. *Vog.* 353.
Carbo et carbunculus auctorum.
Erythema gangrænoſum, *Sauv.* ſp. 7.
Erythema a frigore.
Erythema pernio, *Sauv.* ſp. 4.
Pernio, *Lin.* 259. *Vog.* 350.
Erythema ambuſtio, *Sauv.* ſp. 2.
Eryſipelas ambuſtio, *Sauv.* ſp. 4.
Combuſtura, *Lin.* 245.
Combuſtio, *Boerh.* 476.
Eucaus, *Vog.* 347.
Erythema ab acri alieno applicato.
Eryſipelas Chinenſe, *Sauv.* ſp. 7.
Erythema ab acri inquilino.
Erythema intertrigo, *Sauv.* ſp. 5.
Intertrigo, *Lin.* 247. *Vog.* 502.
Erythema a compreſſione.
Erythema paratrima, *Sauv.* ſp. 6.
Erythema a punctura, *Sauv.* ſp. 9.
Eryſipelas a veſpis, *Sauv.* ſp. 19.
Pſydracia a veſpis, *Sauv.* ſp. 2.
Erythema cum phlegmone.
Eryſipelas phlegmonodes auctorum.
Erythema cum œdemate.
Eryſipelas ſymptomaticum, *Sauv.* ſp. 6.

The word *erythema* doth not apply to any primary diſeaſe, but to a great number of thoſe cutaneous inflammations denominated by another general term, *viz.* the *eryſipelas*, or "St. Anthony's fire;" and which being commonly ſymptomatic of ſome other inflammation or diſorder, are to be removed only by removing the primary diſeaſe. The erythema is found ſcarcely to bear any kind of warm application to itſelf; and is very apt, if treated as a primary diſeaſe, to terminate in a gangrene of the part affected, or ſome other diſorder ſtill more dangerous. The difference between the *phlegmon* or preceding ſpecies, and *erythema*, according to Dr. Cullen, is, that, in the former, the inflammation ſeems particularly to affect the veſſels on the internal ſurface of the ſkin

communicating with the lax adjacent cellular texture; whence a more copious effusion, and that too of serum convertible into pus, takes place. In the erythema, the affection is of the vessels on the external surface of the skin communicating with the *rete mucosum*, which does not admit of any effusion but what separates the cuticle and gives occasion to the formation of a blister, while the smaller size of the vessels admits only of the effusion of a thin fluid very seldom convertible into pus. For the cure of the fever attended with erythema, or *erysipelas*, see PHLEGMASIÆ, ORD: III. *Genus* xxvi. With regard to the external treatment little can be said, as the cases occur very seldom in which we should be justified in using any topical remedies whatever. Where the disease is situated on the head or face, cold or astringent applications are extremely dangerous and liable to occasion phrenitis. If any thing is to be attempted, it is to assuage the burning heat of the skin, by letting the patient hold his face over a vessel of hot water into which some camphor is thrown, so that the steam may be felt; or in case of a troublesome effusion of lymph from the skin, we may absorb it by applying occasionally a little starch powder.

Some have preferred bathing the part with aqua ammoniæ acetatæ alone. But in any case, these applications should be previously warmed, in a tea-cup placed in hot water; and the part should be covered immediately after their use. Greasy applications are to be wholly interdicted in all cases of erysipelas. These matters however belong to the department of *Surgery*.

GENUS VIII. OPHTHALMIA.

Inflammation of the Eyes.

Ophthalmia, *Sauv.* gen. 196. *Lin.* 43. *Vog.* 341. *Sag.* 231. *Junck.* 23.
Chemosis, *Vog.* 46.
Ophthalmites, *Vog.* 47.
Inflammatio oculorum, *Hoffm.* II. 165.
Ophthalmia taraxis, *Sauv.* sp. 1.
Ophthalmia humida, *Sauv.* sp. 8.
Ophthalmia chemosis, *Sauv.* sp. 12.
Ophthalmia erysipelatosa, *Sauv.* sp. 7.
Ophthalmia pustulosa, *Sauv.* sp. 6.
Ophthalmia phlyctænodes, *Sauv.* sp. 21.
Ophthalmia choroideæ, *Sauv.* sp. 13.
Ophthalmia tenebricosa, *Sauv.* sp. 10.
Ophthalmia trachoma, *Sauv.* sp. 4.
Ophthalmia sicca, *Sauv.* sp. 5.
Ophthalmia angularis, *Sauv.* sp. 14.

Ophthalmia tuberculoſa, *Sauv.* ſp. 3.
Ophthalmia trichiaſis, *Sauv.* ſp. 2.
Ophthalmia cancroſa, *Sauv.* ſp. 15.
Ophthalmia a ſynechia, *Sauv.* ſp. 16.
Ophthalmia a lagophthalmo, *Sauv.* ſp. 17.
Ophthalmia ab eclomate, *Sauv.* ſp. 18.
Ophthalmia ab ungue, *Sauv.* ſp. 19.
Ophthalmia corneæ fiſtula, *Sauv.* ſp. 20.
Ophthalmia uveæ, *Sauv.* ſp. 22.
Ophthalmia metaſtatica, *Sauv.* ſp. 24.
Ophthalmia ſcrophuloſa, *Sauv.* ſp. 9.
Ophthalmia ſyphilitica, *Sauv.* ſp. 11.
Ophthalmia febricoſa, *Sauv.* ſp. 23.

From reading this long liſt of diſtinctions which authors have invented in the ophthalmia, it is evident, that by far the greateſt part of them are ſymptomatic, or merely the conſequence of other diſorders preſent in the habit: and therefore the remedies muſt be directed towards the removal of theſe primary diſorders; and when they are gone, the ophthalmia will be removed of courſe. Dr. Cullen obſerves, that the inflammation of the eye may be conſidered as of two kinds; according as it is ſeated in the membranes of the ball of the eye, when it is named *ophthalmia membranarum;* or as it is ſeated in the ſebaceous glands placed in the tarſus, or edge of the eyelids, in which caſe it may be termed *ophthalmia tarſi.* Theſe two kinds are very frequently connected together, as the one may excite the other; but they are ſtill to be diſtinguiſhed according as the one or the other may happen to be the primary affection.

1. The inflammation of the *membranes* of the eye affects eſpecially, and moſt frequently, the adnata, and appears in a turgeſcence of its veſſels; ſo that the red veſſels which are naturally there, become not only increaſed in ſize, but many more appear than in a natural ſtate. This turgeſcence of the veſſels is attended with pain, eſpecially upon the motion of the ball of the eye; and this irritation, like every other, applied to the ſurface of the eye, produces an effuſion of tears from the lacrymal gland.

The inflammation commonly, and chiefly, affects the adnata ſpread on the anterior part of the bulb of the eye; but uſually ſpreads alſo along the the continuation of the adnata on the inſide of the palpebræ; and as that is extended on the tarſus palpebrarum, the excretories of the ſebaceous glands opening there are alſo frequently affected. When the affection of the adnata is conſiderable, it may be communicated to the ſubjacent membranes of the eye, and even to the retina itſelf; which thereby acquires ſo great ſenſibility, that every impreſſion of light becomes painful. The inflammation of the membranes of the eye is in different degrees,

according as the adnata is more or leſs affected, or according as the inflammation is either of the adnata alone, or of the ſubjacent membranes alſo; and upon theſe differences, different ſpecies have been eſtabliſhed; but they ſeem all to differ only in degree, and are to be cured by the ſame remedies more or leſs employed.

The proximate cauſe of ophthalmia is not different from that of inflammation in general; and the different circumſtances of ophthalmia may be explained by the difference of its remote cauſes, and by the different parts of the eye which it happens to affect; as may be underſtood from what has been already ſaid. We ſhall give an account of the method of cure in SURGERY, vol. II. to which it more properly belongs.

GENUS IX. PHRENITIS.

PHRENSY, or *Inflammation of the Brain.*

Phrenitis, *Sauv.* gen. 101. *Lin.* 25. *Sag.* gen. 301. *Boerh.* 771. *Hoffm.* II. 131. *Junck.* 63.
Phreniſmus, *Vog.* 45.
Cephalitis, *Sauv.* gen. 109. *Sag.* gen. 310.
Sphaceliſmus, *Lin.* 32.
Phrenitis vera, *Sauv.* ſp. 1. *Boerh.* 771.
Phrenitis idiopathica, *Junck.* 63.
Cephalalgia inflammatoria, *Sauv.* ſp. 9.
Cephalitis ſpontanea, *Sauv.* ſp. 3.
Cephalitis ſiriaſis, *Sauv.* ſp. 4.
Siriaſis, *Vog.* 34.
Cephalitis Littriana, *Sauv.* ſp. 5.

Dr. Cullen obſerves, that the *true phrenitis*, or inflammation of membranes or ſubſtance of the brain, is very rare as an original diſeaſe: but, as a ſymptom of others, much more frequent; of which the following kinds are enumerated by different authors:

Phrenitis ſynochi pleuriticæ, *Sauv.* ſp. 2.
Phrenitis ſynochi ſanguineæ, *Sauv.* ſp. 4.
Phrenitis calentura, *Sauv.* ſp. 11.
Phrenitis Indica, *Sauv.* ſp. 12.
Cephalitis Ægyptiaca, *Sauv.* ſp. 1.
Cephalitis epidemica, anno 1510, *Sauv.* ſp. 6.
Cephalitis verminoſa, *Sauv.* ſp. 7.
Cephalitis cerebelli, *Sauv.* ſp. 8.
Phrenitis miliaris, *Sauv.* ſp. 3.
Phrenitis varioloſa, *Sauv.* ſp. 5.
Phrenitis morbilloſa, *Sauv.* ſp. 6.

Phrenitis a plica, *Sauv.* ſp. 8.
Phrenitis aphrodiſiaca, *Sauv.* ſp. 9
Phrenitis a trantiſmo, *Sauv.* ſp. 14.
Phrenitis hydrophobica, *Sauv.* ſp. 15.
Phrenitis a dolore, *Sauv.* ſp. 13.
Cephalitis traumatica, *Sauv.* ſp. 2.

1. *Deſcription.*] The ſigns of an impending phrenitis are, immoderate and continual watchings; or if any ſleep be obtained, it is diſturbed with dreams and gives no refreſhment: acute and laſting pains, eſpecially in the hind part of the head and neck; little thirſt; a great and ſlow reſpiration, as if proceeding from the bottom of the breaſt; the pulſe ſometimes ſmall and ſlow, ſometimes quick and frequent; a ſuppreſſion of urine; and forgetfulneſs. The diſeaſe when preſent may be known by the following ſigns: the veins of the head ſwell, and the temporal arteries throb much; the eyes are fixed, ſparkle, and have a fierce aſpect; the ſpeech is incoherent, and the patient behaves very roughly to the by-ſtanders, with furious attempts to get out of bed, not indeed continually, but returning as it were by paroxyſms; the tongue is dry, rough, yellow or black; there is a coldneſs of the external parts; a proneneſs to anger; chattering of the teeth; a trembling of the hands, with which the patient ſeems to be gathering ſomething, and actually does gather the nap off the bed-clothes.

2. *Cauſes of, and perſons ſubject to, this diſorder.*] People of a hot and bilious habit of body, and ſuch as are of a paſſionate diſpoſition, are apt to be affected with phrenitis. In the ſame danger are thoſe who uſe much ſpice, or are given to hot and ſpirituous liquors; who have been expoſed more than uſual to the ſun, or obliged to undergo immoderate ſtudies or watchings; who are ſubject to head-achs, or in whom ſome cuſtomary hemorrhages have been ſtopped; or the diſeaſe may ariſe from ſome injury done to the head externally. Pringle obſerves, that the phrenitis, when conſidered as an original diſeaſe, is apt to attack ſoldiers in the ſummer ſeaſon when they are expoſed to the heat of the ſun, and eſpecially when aſleep and in liquor. A ſymptomatic phrenitis is alſo more frequent in the army than elſewhere, on account of the violence done in all fevers when the ſick are carried in waggons from the camp to an hoſpital, where the very noiſe or light alone would be ſufficient, with more delicate perſons, to raiſe a phrenſy. From theſe and ſimilar cauſes, a ſtate of active inflammation, affecting ſome parts within the cranium, is produced: and there can be no doubt, that from this all the ſymptoms of the diſeaſe ariſe, and particularly that peculiar delirium which characteriſes it.

Dr. Moſeley, in correſpondence with his friend the late Dr. Charles Irwin, gives the following account of certain adventitious

cauſes of phrenitis in hot climates.—"He informed me," ſays Dr. Moſeley, "that, in the intermittent fevers (on the Spaniſh main), the *delirium*, which commonly came on in the paroxyſm of the fever, after a few returns of it, ſometimes remained during the intermiſſions, which ſoon became irregular, from reduplications of the acceſſions; and that ſeveral men wandered about in a *phrenſy*, and died raving mad.

"Imbecility of mind, as well as of body, is a common conſequence of long and obſtinate diſorders in hot climates; and I have frequently obſerved that the mind has been greatly impaired after irregular and haraſſing intermittents, and ſometimes a temporary inſanity has enſued. This muſt have been alſo obſerved by others; but as far as I know, no perſon, except Sydenham, who was the firſt that noticed it, has mentioned it as occurring in practice. He ſays, he has often found, when the patients had been extremely debilitated by long continuance of the diſeaſe, the doubling of the fits, and repeated evacuations, that they have been ſeized with a madneſs, when they began to recover, which went off proportionably as they gathered ſtrength: but that ſometimes, from injudicious evacuations only, it has degenerated into a miſerable kind of folly for life. Poſt evacuationes fortiores adhibitas, in miſeram quandam *ſtultitiam* degenerans, non niſi cum ipſa ægrorum vita terminatur.

"But," continues the author, "there is another cauſe of theſe diſorders of the brain in the Weſt Indies, which neither injudicious evacuations, nor climate, nor the nature of the diſeaſe, are in the leaſt acceſſary in producing, though generally attributed to them. This cauſe is the *Peruvian bark*.

"In a letter I received from Doctor Irving, while he was at Blue-fields, he ſays, 'From neglect of your perſpiratory practice, or from being deſtitute of proper neceſſaries, I am convinced many have been loſt on this expedition. Nature wanted vigour to diſcharge the incipient fevers by the pores, which ſhould have been ſupported by warm clothing and ſudorific practice, &c. But by truſting wholly to bark, an early coma came on, and a paralyſis of the limbs, and ſoon after, death. I have ſeen a multitude die at St. Juan's without a point of variety from this ſtated.'

"He found that the ſtomach required the utmoſt attention: for the energy of that organ giving way, was ſeldom reſtored. That nothing was ſo grateful as *London bottled porter*. Wine was neither ſo much deſired, by the ſick, nor ſo ſerviceable in corroborating, and keeping up the powers of the ſtomach; which, like the reſt of the body, from the ſlighteſt indiſpoſition, was ſoon reduced to an uncommon ſtate of debility. With London bottled porter, and ſtrong infuſions of ſnake root, or cinnamon, and a diſcreet uſe of diaphoretics, and a cautious uſe of bark, he conquered many of thoſe intermittents, which from incautious evacu-

ations, and emetic tartar, would have degenerated into fluxes, and remittents, and from an exceſſive and untimely uſe of bark, into other diſeaſes, which art could not have remedied.

" *Bark*, in unſkilful hands, is a precarious remedy even in intermittents in the Weſt Indies, and ſhould never be long perſiſted in, without evidently good effects: and then not without the frequent intervention of calomel."

In what manner local diſeaſes, even of the brain itſelf, produce affections of the mind, we are ſtill totally in the dark.

3. *Prognoſis.*] Every kind of phrenitis, whether idiopathic or ſymptomatic, is attended with a high degree of danger: and, unleſs removed before the fourth day, a gangrene or ſphacelus of the meninges readily take place, and the patient dies delirious. The following are the moſt fatal ſymptoms: a continual and furious delirium, with watching; thin watery urine, white fæces, the urine and ſtools running off involuntarily, or a total ſuppreſſion of theſe excretions; a ready diſpoſition to become ſtupid, or to faint; trembling, rigor, chattering of the teeth, convulſions, hiccough, coldneſs of the extremities, trembling of the tongue, ſhrill voice, a ſudden ceſſation of pain, with apparent tranquillity. The following are favourable: ſweats, apparently critical, breaking out; a ſeeming effort of nature to terminate the diſeaſe by a diarrhœa; a large hemorrhagy from the noſe; ſwellings of the glands behind the ears; hæmorrhoids.

4. *Cure.*] From what has been ſaid of the theory of this diſeaſe, the cure muſt entirely depend on obtaining a reſolution of the inflammation. The objects chiefly to be aimed at with this view, are, 1. The removal of ſuch exciting cauſes as continue to operate. 2. The diminution of the momentum of the blood in the circulating ſyſtem in general. 3. The diminution of impetus at the brain in particular: and, 4. The avoiding circumſtances, which tend either to accelerate the motion of the blood, or to give determination to the head.

Different modes may be uſed with theſe intentions; but here the moſt powerful remedies are to be immediately employed. Large and repeated bleedings are eſpecially neceſſary; and theſe too taken from veſſels as near as poſſible to the part affected. The opening the temporal artery has been recommended, and with ſome reaſon: but as the practice is attended with ſome inconveniences, perhaps the opening of the jugular veins may prove more effectual; with which, however, may be joined the drawing of blood from the temples and nape of the neck, by cupping and ſcarifying. It is alſo probable, that purging by draſtic ſubſtances may be of more uſe in this than in other inflammatory affections, as it may operate by revulſion. For the ſame purpoſe alſo, warm pediluvia are a ſuitable remedy. The taking off the force of the blood in the veſſels of the head by an erect poſture is alſo generally uſeful.

Bliſtering is alſo uſeful, but chiefly when applied to the ſcalp. In ſhort, every part of the antiphlogiſtic regimen is here neceſſary, and particularly the admiſſion of cold air. Even cold ſubſtances applied to the head have been found uſeful; and the application of ſuch refrigerants as vinegar is certainly proper. Opiates are thought to be hurtful in every inflammatory ſtate of the brain. On the whole, however, it muſt be remarked, that practitioners are very uncertain with regard to the means proper to be uſed in this diſeaſe; and the more ſo, as the ſymptoms by which the diſeaſe is commonly judged to be preſent, appear ſometimes without any internal inflammation; and, on the other hand, diſſections have ſhewn, that the brain has been inflamed, where few of the peculiar ſymptoms of inflammation had appeared before.

Dr. Fordyce makes the following remarks on the prevention and cure of this diſeaſe.

It is prevented by avoiding or counteracting the cauſes.

For the cure, the moſt powerful means of *reſolution* are immediately to be employed.

Fiat V. S. e brachio ad ℥xij. xx. vel xxx. pro diatheſi inflammatoria, aut corporis viribus, et repetatur pro re nata.

After the ſtrength of the ſyſtem, or general inflammation, are diminiſhed,

Fiat venæſectio e vena jugulare, vel arteria temporale; vel temporibus applicentur hirudines.

At the ſame time evacuations from the inteſtines may likewiſe be performed with advantage.

(No. 58.) ℞ Infus. Sen. ℥jß. ad ℥ij.
Sal. Glaub. ver. ℥ß. ad ℥iß.
Vel, Tart. Solub. ℥ß. ad ʒvj.
Vel, Polychreſt. Rupel. ℥ſs. ad ℥j.
Mannæ ʒiij.
Tinc. Senn. ʒij.
M. Ft. Hauſt. purgans. Capt. poſt V. S. et repet. pro re nata.

When the purgative is not operating, (No. 21.) or (No. 27.) may be given, but are not to be depended on.

After having diminiſhed the ſtrength of the veſſels,

Applicet. Emplaſt. Epiſpaſt. capiti raſo.

The food, throughout the diſeaſe, is to conſiſt only of decoctions of farinaceous ſeeds in water, acidulated.

It is farther to be obſerved, that when an inflammation ariſes at the beginning of a fever, and it, as well as the general inflammation, continues, ſuch fever is alſo to be attended to in the cure of the inflammation, and the treatment varied according to the violence of them.

Genus X. CYNANCHE.

Cynanche, *Sauv.* gen. 110. *Lin.* 33. *Sag.* gen. 300.
Angina, *Vog.* 49. *Hoffm.* II. 125. *Junck.* 30.
Angina inflammatoria, *Boerh.* 798.

Sp. I. Cynanche tonsillaris.

The *Inflammatory* Quinsy.

Cynanche tonsillaris, *Sauv.* sp. 1.
Anginæ inflammatoriæ, sp. 5. *Boerh.* 805.

1. *Description.*] This is an inflammation of the mucous membrane of the fauces, affecting principally that congeries of mucous follicles which forms the tonsils; and from thence spreading along the velum and uvula, so as frequently to affect every part of the mucous membrane. The disease appears by some tumor and redness of the parts; is attended with a painful and difficult deglutition; a troublesome clammines of the mouth and throat; a frequent but difficult excretion of mucus; and the whole is accompanied with pyrexia. The inflammation and tumor are commonly at first most considerable in one tonsil; and afterwards, abating in that, increase in the other. This disease is not contagious.

2. *Causes of, and persons subject to, this disorder.*] The quinsy is commonly occasioned by cold externally applied, particularly about the neck. It affects especially the young and sanguine; and a dispositon to it is often acquired by habit. It occurs especially in the spring and autumn, when vicissitudes of heat and cold frequently take place.

3. *Prognosis.*] This species of quinsy terminates frequently by resolution, sometimes by suppuration, but hardly ever by gangrene; though in some places sloughy spots appear on the fauces: the prognosis, therefore, is generally favourable.

4. *Cure.*] As the principal morbid affection in this disease, on which all its characterising symptoms immediately depend, is the active inflammation in the tonsils and neighbouring parts, the object first and principally to be aimed at in the cure, is to obtain a resolution of this inflammation. Sometimes, however, it is necessary to have recourse to remedies, with the view of obviating urgent symptoms before a resolution can be effected; and in other cases, where a resolution cannot be obtained, it must be the aim of the practitioner to promote a speedy and favourable suppuration. After suppuration has taken place, the proper means of promoting

a discharge of the purulent matter will conclude the cure; and to effect this, nothing is so beneficial as fumigating the throat frequently, by means of a funnel placed over a vessel of boiling water, into which some camphor, grossly powdered, is thrown. While there is a chance of preventing the formation of pus, some local bleeding may be necessary; and also large and general evacuations from the arm are beneficial. The opening of the ranular veins is held to be an insignificant remedy, according to Dr. Cullen; but it is recommended as an efficacious one by Sir John Pringle; more benefit, however, may in general be derived from leeches to the external fauces. The inflammation may be often relieved by moderate astringents, and particularly by acids applied to the parts affected. Dr. Saunders directs the following gargle to be used, but not too frequently:

(No. 59.) ℞ Acidi muriat. gutt. xxx.
Mellis rosæ ʒij.
Decocti hordei ʒvj. Misce.

Besides these, blistering, and still more frequently rubefacient medicines, are applied with success, as well as the antiphlogistic purgatives, No. 3, 4, and 81; and every part of the antiphlogistic regimen is to be observed, except the application of cold. Sir John Pringle recommends a thick piece of flannel moistened with the following:

(No. 60.) ℞ Ol. olivæ ʒj.
Spiritus Cornu cervi ʒj.
Misce fiat Linimentum.

To be applied to the throat, and renewed once every four or five hours. The following, recommended by Mr. Cruikshank, is still more effectual:

(No. 61.) ℞ Camphoræ drach. ij.
Olei olivæ unc. j.
Aquæ ammoniæ puræ unc. iij.

The camphor is to be dissolved in the oil, and then added to the water of pure ammonia.

Or the following from Dr. Fordyce may be resorted to:

(No. 62.) ℞ Ol. olivæ ʒj.
Alkal. Volat. Caust. ʒij ad ʒj.
Camph. gr. xxx.
M. Fiat Liniment. inung. fauces externe sæpius.

These means, employed after bleeding, either carry off or at least lessen the inflammation. When the disease has a tendency to suppuration, nothing will be more useful than the taking into the fauces the steams of camphor and warm water, as mentioned above. Benefit is also obtained from poultices applied to the external fauces.

Dr. Fordyce directs, in this disease,

(No. 63.) ℞ Flor. Cham. vel Summit. Abſynth. vel
Summit. Centaur. Minor. Manip. ij.
Rad. Bryon. Alb. recent. ℥j.
Folior. Malv. vel Alth. Man. j. contunde et leviter
coque in
Aq. Font. ℔ iiij.
Colatura utatur pro Fotu ter indies.
Adde Herbis Coctis,
Unguent. Simp. ℥ij.
Fiat Cataplaſma part. affect. applicandum.

He obſerves alſo, that the inflammation may ſometimes be diminiſhed, by augmenting the ſecretion from the mucous glands of the mouth and throat; and that we are to endeavour to prevent the mucous membrane from being affected by the ſalts of the thin mucus.

(No. 64.) ℞ Aq. Cinnam. Ten. ℥viij.
Oxymel. Scillit. ℥ß.
M. Ft. Gargariſma. Utatur ſæpius.

(No. 65.) ℞ Syr. ex Althæa } aa ℥j.
Ol. Amygdalæ }
Conſerv. Cynoſb. ℥ß.
M. Ft. Linctus. Capt. Coch. unum parvum frequenter.

If the inflamed parts ſuppurate, the mouth and throat are to be kept moiſt with

(No. 66.) ℞ Infuſ. Sem. Lini ℔j.
Sacch. Alb. ℥j.
Succ. Aur. Hiſp. ℥ß.

If no fluid can be gotten into the ſtomach, the blood veſſels may be ſupplied in ſome meaſure by clyſters.

(No. 67.) ℞ Aq. Font. ℥vj.
Amyl. Alb. ℥iij. Solve, et adde
Sacchari ℥ſs.
Fiat Enema quartâ quâque horâ injicienda.

Dr. Temple directs the cure to be attempted in the following way: for the removal of the inflammatory tonſillary ſore throat, the general antiphlogiſtic regimen will be neceſſary, except bleeding: leeches and bliſters are to be applied to the external fauces; a purge or two muſt be given in the beginning, in which ſtage of the diſeaſe full vomiting is often of eſſential ſervice, and acid and aſtringent gargles muſt be uſed.

(No. 68.) ℞ Decoct. cinchonæ, Vel,
Decoct. cort. querc. ℥vj.
Mel. roſæ ℥j.
Acid. vitr. dil. ℥jſs. m. f. gargariſma.
Vel,

(No. 69.) ℞ Infuſ. roſ. ℔ſs.
Alum. ʒij.
Mell. roſæ ℥j. m. f. gargariſma.
Vel,
(No. 70.) ℞ Aq. ammoniæ acetat. ℥vj. pro gargariſma.
Vel,
(No. 71.) ℞ Linim. ammoniæ ℥j. faucibus externis applic.
Vel,
(No. 72.) ℞ Emp. cantharidis faucibus externis applicandum.

He ſays the ſteam of water and vinegar ſhould be inhaled from a tea-pot, or proper apparatus.

If ſuppuration is likely to take place, the patient ſhould frequently inhale the ſteam of warm water; and if in that ſtage the ſwelling of the tonſils ſhould be ſo great as to endanger ſuffocation, or prevent deglutition, they ſhould be ſcarified, or they may be made to break by exciting vomiting.

In caſe the ſwelling of the tonſils, fauces, and tongue, ſhould be ſo great as to endanger immediate ſuffocation, and at the ſame time render it impoſſible to get at the tonſils to ſcarify them, and if alſo the power of deglutition is deſtroyed, ſo that no medicine can be got down to excite vomiting, and by that means burſt the tonſils, the patient may be ſnatched from inſtant death by inhaling æther from an inhaler, into which put water that nearly boils, and add to it a drachm of æther: the inhaler is to be inſtantly covered, and the patient muſt inhale the vapour as ſoon as poſſible. The ſtimulus will be ſo great, that it will excite an action and contraction in the parts ſufficient to break the tonſils, which of courſe will give inſtantaneous relief.

This, however, it will be readily underſtood, can only ſucceed when ſuppuration has taken place in the tonſils, but it is in this ſtate only that the patient is likely to be in ſuch immediate danger. If this, however, does not ſucceed, bronchotomy muſt be had recourſe to.

Dr. Temple adviſes, after the abſceſs has broke, that a gentle cathartic ſhould be given, and points out the treatment where a gangrene is threatened.

When the abſceſs is attended with much ſwelling, if it break not ſpontaneouſly, it ought to be opened by a lancet; and this does not require much caution, as even the inflammatory ſtate may be relieved by ſome ſcarification of the tonſils. When this diſeaſe runs very rapidly to ſuch a height as to threaten ſuffocation, it is ſometimes neceſſary to have recourſe to bronchotomy as the only mean of ſaving the life of the patient. But there is reaſon to believe that this operation has ſometimes been employed where it was unneceſſary: and we may ſafely venture to ſay, that it is but ſeldom requiſite; inſomuch that Dr. Cullen tells us, he has never in his practice ſeen any caſe requiring bronchotomy.

Sp. II. Cynanche maligna.

The *malignant, putrid,* or *ulcerous Sore Throat.*

Cynanche maligna, *Sauv.* ſp. 3.
Cynanche ulceroſa, *Sauv.* var. a. Journ. de Med. 1758.
Cynanche gangrænoſa, *Sauv.* var. b. Journ. de Med. 1756.
Ulcera faucium et gutturis anginoſa et lethalia, Hiſpanis *Garotillo, Lud. Mercat.* conſult. 24.
Angina ulceroſa, *Fothergill*'s Account of the ulcerous ſore throat, edit. 1751. *Huxham* on the malignant ulcerous ſore throat, from 1751 to 1753.
Febris epidemica cum angina ulcuſculoſa, *Douglas*'s Practical Hiſtory, Boſton, 1736.
Angina epidemica, *Ruſſel,* Oecon. Natur. p. 105.
Angina gangrænoſa, *Withering*'s Diſſert. Inaug. Edinb. 1766.
Angina ſuffocativa, *Bard*'s Inquiry, New-York, 1771.
Angina maligna, *Johnſtone* on malignant Angina, Worceſter, 1779.

1. *Hiſtory and deſcription.*] This diſeaſe is not particularly deſcribed by the ancient phyſicians; though perhaps the Syrian and Egyptian ulcers, mentioned by Aretæus Cappadox, and the peſtilent ulcerated tonſils we read of in Aetius Amideus, were of this nature. Some of the ſcarlet fevers mentioned by Morton, ſeem alſo to have approached near to it. In the beginning of the laſt century, a diſeaſe, exactly ſimilar to this, is deſcribed by the phyſicians of that time as raging with great violence and mortality in Spain, and ſome part of Italy; but no account of it was publiſhed in this country till the year 1748, when a very acute one was drawn up by Dr. Fothergill, and in 1752 by Dr. Huxham. The latter obſerves, that this diſeaſe was preceded by long, cold, and wet ſeaſons; by which probably the bodies of people were debilitated, and more apt to receive contagion, which poſſibly alſo might be produced by the ſtagnant and putrid waters.

The attack of this diſeaſe was very different in different perſons. Sometimes a rigor, with fulneſs and ſoreneſs of the throat, and painful ſtiffneſs of the neck, were the firſt ſymptoms complained of. Sometimes alternate chills and heats, with ſome degree of giddineſs, drowſineſs, or head-ach, uſhered in the diſeaſe. It ſeized others with much more feveriſh ſymptoms; great pain of the head, back, and limbs; a vaſt oppreſſion of the præcordia, and continual ſighing. Some grown perſons went about for ſome days in a drooping ſtate, with much uneaſineſs and anxiety, till at laſt they were obliged to take to their beds. Thus various was the diſeaſe, ſays Dr. Huxham, at the onſet. But it commonly be-

gan with chills and heats, load and pain of the head, foreneſs of throat, and hoarſeneſs; ſome cough, ſickneſs at ſtomach, frequent vomiting and purging, in children eſpecially, which were ſometimes very ſevere; though a contrary ſtate was more common to the adult. There was in all a very great dejection of ſpirits, very ſudden weakneſs, great heavineſs on the breaſt, and faintneſs, from the very beginning. The pulſe in general was quick, ſmall, and fluttering, though ſometimes heavy and undulating. The urine was commonly pale, thin, and crude; however, in many grown perſons, it was in ſmall quantities and high-coloured, or like turbid whey. The eyes were heavy, reddiſh, and as it were weeping; the countenance very often full, fluſhed, and bloated, though ſometimes pale, and ſunk.

How ſlight ſoever the diſorder might appear in the day-time, at night the ſymptoms became greatly aggravated, and the feveriſh habit very much increaſed, nay, ſometimes a delirium occurred on the very firſt night; and this exacerbation conſtantly returned through the whole courſe of the diſeaſe. Indeed, when it was conſiderably on the decline, our author ſays he has been often pretty much ſurpriſed to find his patient had paſſed the whole night in a phrenſy, whom he had left tolerably cool and ſedate in the day.

Some few hours after the ſeizure, and ſometimes cotemporary with it, a ſwelling and foreneſs of the throat was perceived, and the tonſils became very tumid and inflamed, and many times the parotid and maxillary glands ſwelled very much, and very ſuddenly, even at the very beginning; ſometimes ſo much as even to threaten ſtrangulation. The fauces alſo very ſoon appeared of a high florid red, or rather of a bright crimſon colour, very ſhining and gloſſy; and moſt commonly on the uvula, tonſils, velum palatinum, and back part of the pharynx, ſeveral whitiſh or aſh-coloured ſpots appeared ſcattered up and down, which oftentimes increaſed very faſt, and ſoon covered one or both the tonſils, uvula, &c. thoſe in the event proved ſloughs of ſuperficial ulcers (which ſometimes, however, eat very deep into the parts). The tongue at this time, though only white and moiſt at the top, was very foul at the root, and covered with a thick yellowiſh, or brown coat. The breath alſo now began to be very nauſeous; which offenſive ſmell increaſed hourly, and in ſome became at length intolerable, and that too ſometimes even to the patients themſelves.

The ſecond or third day every ſymptom became much more aggravated, and the fever much more conſiderable; and thoſe that had ſtruggled with it tolerably well for thirty or forty hours, were forced to ſubmit. The reſtleſſneſs and anxiety greatly increaſed, as well as the difficulty in ſwallowing. The head was very giddy, pained, and loaded; there was generally more or leſs of a deli-

rium; sometimes a pervigilium and perpetual phrensy, though others lay very stupid, but often starting and muttering to themselves. The skin was very hot, dry, and rough; there was very rarely any disposition to sweat. The urine was pale, thin, crude; often yellowish and turbid. Sometimes a vomiting was urgent, and sometimes a very great looseness, in children particularly, The sloughs were now much enlarged, and of a darker colour, and the surrounding parts tended much more to a livid hue. The breathing became much more difficult; with a kind of rattling stertor, as if the patient was actually strangling, the voice being exceeding hoarse and hollow, exactly resembling that from venereal ulcers in the fauces: this sound in speaking and breathing was so peculiar, that any person in the least conversant with the disease, might easily know it by this odd noise; from whence, indeed, the Spanish physicians gave it the name of *garotillo*, expressing the noise made by persons when they are strangling with a rope. Our author never observed in one of them the shrill barking noise that we frequently hear in inflammatory quinsies. The breath of all the diseased was very nauseous; of some insufferably fetid, especially in the advance of the disorder to a crisis; and many, about the fourth or fifth day, spit off a vast quantity of stinking purulent mucus, tinged sometimes with blood; and sometimes the matter was quite livid, and of an abominable smell. The nostrils, likewise, in many were greatly inflamed and excoriated, continually dripping down a most sharp ichor or sanious matter, so excessively acrid, that it not only corroded the lips, cheeks, and hands of the children that laboured under the disease, but even the fingers and arms of the very nurses that attended them: as this ulceration of the nostrils came on, it commonly caused an almost incessant sneezing in the children; but few adults were affected with it, at least to any considerable degree. It was surprising what quantities of matter some children discharged this way, which they would often rub on their face, hands, and arms, and blister them all over. A sudden stoppage of this rheum from the mouth and nostrils actually choaked several children; and some swallowed such quantities of it, as occasioned excoriations of the intestines, violent gripings, dysentery, &c. nay, even excoriations of the anus and buttocks. Not only the nostrils, fauces, &c. were greatly affected by this extremely sharp matter, but the wind-pipe itself was sometimes much corroded by it, and pieces of its internal membrane were spit up, with much blood and corruption; and the patients lingered on for a considerable time, and at length died tabid; though there were more frequent instances of its falling suddenly and violently on the lungs, and killing in a peripneumonic manner.

Dr. Huxham was astonished sometimes to see several swallow with tolerable ease, though the tumor of the tonsils and throat,

the quantity of thick mucus, and the rattling noiſe in breathing, were very terrible; which he thinks pretty clearly ſhews, that this malignant quinſy was more from the acrimony and abundance of the humors than the violence of the inflammation.

Moſt commonly the angina came on before the exanthemata; but many times the cuticular eruption appeared before the ſore throat, and was ſometimes very conſiderable, though there was little or no pain in the fauces: on the contrary, a very ſevere angina ſeized ſome patients that had no manner of eruption; and yet, even in theſe caſes, a very great itching and deſquamation of the ſkin ſometimes enſued; but this was chiefly in grown perſons, very rarely in children. In general, however, a very conſiderable efflorescence broke out on the ſurface of the body, particularly in children; and it moſt commonly happened the ſecond, third, or fourth day: ſometimes it was partial, ſometimes it covered almoſt the whole body, though very ſeldom the face: ſometimes it was of an eryſipelatous kind; ſometimes more puſtular: the puſtules frequently eminent, and of a deep fiery red colour, particularly on the breaſt and arms: but oftentimes they were very ſmall, and might be better felt than ſeen, and gave a very odd kind of roughneſs to the ſkin. The colour of the efflorescence was commonly of a crimſon hue, or as if the ſkin had been ſmeared over with juice of raſberries, and this even to the fingers ends; and the ſkin appeared inflamed and ſwollen, as it were; the arms, hands, and fingers, were evidently ſo, and very ſtiff, and ſomewhat painful. This crimſon colour of the ſkin ſeemed indeed peculiar to this diſeaſe. Though the eruption ſeldom failed of giving ſome manifeſt relief to the patient, as to anxiety, ſickneſs at ſtomach, vomiting, purging, &c.; yet there was obſerved an univerſal fiery eruption on ſome perſons, without the leaſt abatement of the ſymptoms, nay almoſt every ſymptom ſeemed more aggravated, particularly the fever, load at breaſt, anxiety, and delirium; and our author knew more than one or two patients die in the moſt raging phrenſy, covered with the moſt univerſally fiery aſh he ever ſaw; ſo that, as in the higheſt confluent ſmall-pox, it ſeemed only to denote the quantity of the diſeaſe, as he terms it.

He had under his care a young gentleman, about twelve years of age, whoſe tongue, fauces, and tonſils, were as black as ink, and he ſwallowed with extreme difficulty; he continually ſpit off immenſe quantities of a black, ſanious, and very fetid matter, for at leaſt eight or ten days:—about the ſeventh day, his fever being ſomewhat abated, he fell into a bloody dyſentery, though the bloody, ſanious, fetid expectoration ſtill continued, with a moſt violent cough. He at length, indeed, got over it, to the very great ſurpriſe of every one that ſaw him. Now, in this patient, a ſevere and univerſal raſh broke out upon the ſecond and third day; and the itching of his ſkin was ſo intolerable, that he tore

it all over his body in a moſt ſhocking manner: yet this very great and timely eruption very little relieved his fever and phrenſy, or prevented the other dreadful ſymptoms mentioned.

An early and kindly eruption, however, was moſt commonly a very good omen; and, when ſucceeded by a very copious deſquamation of the cuticle, one of the moſt favourable ſymptoms that occurred; but when the eruption turned of a duſky or livid colour, or prematurely or ſuddenly receded, every ſymptom grew worſe, and the utmoſt danger impended, eſpecially if purple or black ſpots appeared up and down, as ſometimes happened; the urine grew limpid, and convulſions came on, or a fatal ſuffocation ſoon cloſed the tragedy.

The diſeaſe was generally at the height about the fifth or ſixth day in young perſons, in the elder not ſo ſoon; and the criſis many times was not till the eleventh or twelfth, and then very imperfect: ſome adults, however, were carried off in two or three days; the diſtemper either falling on the lungs, and killing in a peripneumonic manner; or on the brain, and the patient either died raving or comatoſe. In ſome, the diſeaſe brought on a very troubleſome cough, purulent expectoration, hæmoptoë, and hectic; in which they lingered on for ſeveral weeks, and then died tabid.

If a gentle eaſy ſweat came on the third or fourth day; if the pulſe became more ſlow, firm, and equal; if the ſloughs of the fauces caſt off in a kindly manner, and appeared at the bottom tolerably clean and florid; if the breathing was more ſoft and free, and ſome degree of vigour and quickneſs returned in the eyes; all was well, and a ſalutary criſis followed ſoon by a continuance of the ſweat, and a turbid, ſubſiding, farinaceous urine, a plentiful expectoration, and a very large deſquamation of the cuticle. But if a rigor came on, and the exanthemata ſuddenly diſappeared or turned livid; if the pulſe grew very ſmall and quick, and the ſkin remained hot and parched as it were, the breathing more difficult, the eyes dead and glaſſy, the urine pale and limpid, a phrenſy or coma ſucceeded, with a coldiſh clammy ſweat on the face or extremities, life was deſpaired of; eſpecially if a ſingultus and choaking or gulping in the throat attended, with ſudden, liquid, involuntary, livid ſtools, intolerably fetid. In ſome few patients Dr. Huxham obſerved, ſome time before the fatal period, not only the face bloated, ſallow, ſhining, and greaſy as it were, but the whole neck very much ſwollen, and of a cadaverous look; and even the whole body became in ſome degree œdematous; and the impreſſion of a finger would remain fixed in a part, the ſkin not riſing again as uſual; an indication that the blood ſtagnated in the capillaries, and that the elaſticity of the fibres was quite loſt.

Medical writers are ſtill much divided in opinion, whether the cynanche maligna is to be conſidered as the ſame diſeaſe with the

ſcarlatina anginoſa, afterwards to be treated of, or not. This queſtion will afterwards come to be more fully diſcuſſed. At preſent we ſhall only obſerve, that although ulcerous ſore throats of a malignant nature often appear ſporadically, yet that the diſeaſe above deſcribed appears only as an epidemic, and is always the conſequence of contagion.

2. *Prognoſis.*] This may be eaſily gathered from the above deſcription. The malignant and putrid tendency of the diſeaſe is evident, and an increaſe of the ſymptoms which ariſe from that putreſcent diſpoſition of the body muſt give an unfavourable prognoſtic; as, on the contrary, a decreaſe of theſe, and an apparent increaſe of the *vis vitæ* are favourable. In general, what is obſerved to be favourable in the nervous and putrid malignant fevers, is alſo favourable in this, and *vice verſa.*

3. *Cauſes.*] Since the accurate accounts given by Drs. Fothergill and Huxham of the epidemics which prevailed about fifty years ago, this diſeaſe has frequently been obſerved at times epidemic in almoſt every different part of Britain. Like ſmall-pox, meaſles, and chincough, it ſeems in every caſe to be the effect of a peculiar and ſpecific contagion. It has been obſerved to prevail equally generally in every ſituation, and at every ſeaſon; and on expoſure to the contagion, no age, ſex, or condition, is exempted from it. But the having once had the diſeaſe, ſeems in this affection to afford the ſame ſecurity againſt future contagion as in the ſmall-pox: at leaſt inſtances, where it can be ſaid that the ſame individual has been twice affected with it, are both very rare and very doubtful, as well as in ſmall-pox.

4. *Cure.*] Like other febrile contagions, the malignant ulcerous ſore throat is terminated only by a natural courſe; and the chief buſineſs of the practitioner is to combat unfavourable occurrences. In this the ſeptic tendency of the diſeaſe is chiefly to be kept in view. The debility with which it is attended renders all evacuations by bleeding and purging improper, except in a few inſtances on the firſt attack, where the debility is leſs, and the inflammatory ſymptoms more conſiderable. The fauces are to be preſerved from the effects of the acrid matter poured out upon them, and are therefore frequently to be waſhed out by gargles of ſage tea and vinegar, or by the following, uſed at St. George's Hoſpital:

(No. 73.) ℞ Mellis acetati ℥ij.
Aquæ hordei ℥x.
Miſce. Fiat Gargariſma.

Or the following from the Pharmacopœia of St. Thomas's:

(No. 74.) ℞ Tincturæ roſæ ℥viij.
Mellis roſæ ℥j. Miſce.

(No. 75.) ℞ Gargariſmatis communis ℥viij.
Aluminis ℥ſſ. Miſce.

(No. 76.) ℞ Mucilaginis ſeminis cydon. ℥vij.
Mellis roſæ ℥j.
Boracis pulverati ʒij. Miſce.

Dr. Saunders recommends the following detergent remedies to procure a ſeparation of the ſloughs from the fauces:

(No. 77.) ℞ Decoct. cinchonæ ℥vj.
Acidi vitriol. dilut. ʒj.
Mellis roſæ ℥j.
Miſce. Fiat Gargariſma quocum os et fauces ſæpè de die colluantur.

(No. 78.) ℞ Oxymel. Æruginis ℥ſs.
Mellis roſæ ℥ij,
Decocti hordei ℥iiiſs.
Miſce, et utatur pro Gargariſmate.

This diſeaſe, Dr. Saunders obſerves, ſhould be diſtinguiſhed from the inflaminatory angina, and from a particular ſpecies of epidemic ſore throat, which has lately appeared in this country, attended with much pain and difficult deglutition, violent head-ach with inflamed eyes, ſometimes an univerſal redneſs and eruption on the ſkin.

A diaphoreſis, the doctor obſerves, may be brought on by the following:

(No. 79.) ℞ Aquæ ammon. acet. ℥ij.
Vini antim. tart. ʒj,
Miſt. camphorat. ℥iv. Miſce.
Sumat cochlearia iij, ſexta quaque hora.

Sometimes a diarrhœa occurs in this diſeaſe. It may be moderated by,

(No. 80.) ℞ Kino in pulv. trit. ℈j.
Pulv. cretæ comp. cum Opio gr. x.

Miſce. Fiat pulvis, vel ſyrupum zingiberis addendo, bolus, ad alvum contrahendum mane ſumendus.

The putreſcent ſtate of the whole ſyſtem ſhould be guarded againſt and corrected by internal antiſeptics, eſpecially by the Peruvian bark given in the beginning and continued through the courſe of the diſeaſe. For this purpoſe No. 36 or 37 may be adminiſtered, or the *Hauſtus Cinchonæ* of St. George's Hoſpital.

(No. 81.) ℞ Decocti cinchonæ ℥iſs.
Tincturæ cinchonæ ʒiſs. Miſce.

Great benefit is alſo often derived from the liberal uſe of the mineral acids which may be joined with the draught. Both the vitriolic and muriatic, in a ſtate of proper dilution, have been highly extolled by different medical writers, and are productive of the beſt effects in actual practice, when they can be introduced to a ſufficient extent. On the firſt attack the emetics (No. 1.) or (No. 2.) both by vomiting and nauſeating, may prove uſeful. When any conſiderable tumor occurs, bliſters applied externally

to the throat will be of ſervice, and in any caſe may be proper to moderate the inflammation.

Very lately, the internal uſe of the *capſicum annuum*, or Cayenne pepper, as it is commonly called, has been highly celebrated in this affection; and it is particularly ſaid to have been employed with ſingular ſucceſs in the Weſt Indies.

Sp. III. Cynanche trachealis.

The *Croup*.

Cynanche trachealis, *Sauv.* ſp. 5.
Cynanche laryngea auctorum, *Eller* de cogn. et curand. morb. ſect. 7.
Anginæ inflammatoriæ, ſp. 1. *Boerh.* 801.
Angina latens et difficilis, *Dodon.* obſ. 18.
Angina interna, *Tulp.* l. 1. obſ. 51.
Angina pernicioſa, *Greg. Horſt.* Obſ. l. iii. obſ. 1.
Suffocatio ſtridula, *Home* on the Croup.
Aſthma infantum, *Millar* on the Aſthma and Chincough.
Aſthma infantum ſpaſmodicum, *Ruſh*, Diſſertation, Lond. 1770.
Cynanche ſtridula, *Crawford* Diſſert. Inaug. Edin. 1771.
Angina epidemica anno 1743. *Molloy* apud *Rutty*'s Hiſtory of the weather.
Morbus ſtrangulatorius, *Starr*, Phil. Tranſ. No. 495. Morbus truculentus infantum, *Francof.* ad Viadrum et in vicinia graſſans, anno 1758. C. a Bergen. A nova. N. C. tom. ii. p. 1. 57.
Catarrhus ſuffocativus Barbadenſis ann. 1758. *Hillary*'s Diſeaſes of Barbadoes.
Angina inflammatoria infantum, *Ruſſel* Oecon. nat. p. 70.
Angina polypoſa ſive membranacea *Michealis*. Argentorati 1778, et auctores ab eo allegati.

1. *Deſcription.*]. The beſt deſcription of this diſeaſe we have in Dr. Cullen's Practice of Phyſic. He informs us, that it conſiſts of an inflammation of the glottis, larynx, or upper part of the trachea, whether it affect the membranes of theſe parts or the muſcles adjoining. It may ariſe firſt in theſe parts, and continue to ſubſiſt in them alone; or it may come to affect theſe parts from the cynanche tonſillaris, or maligna, ſpreading into them.

Of late years it has been far from a rare occurrence, and many inſtances of it have been marked and recorded by phyſicians; though its true nature, and proper mode of treatment, are ſtill ſubjects of controverſy among them; ſome contending, that there exiſt two diſtinct ſpecies of the diſeaſe, the *inflammatory* and the

ſpaſmodic, while others conſider ſpaſm rather as an adventitious ſymptom. We ſhall preſently collect, from the different fugitive publications on the ſubject, all that modern practice has ſupplied.

The croup is known by a peculiar croaking ſound of the voice, by difficult reſpiration, with a ſenſe of ſtraitening about the larynx, and by a pyrexia attending it.

From the nature of theſe ſymptoms, and from the diſſection of the bodies of perſons who died of this diſeaſe, there is no doubt of its being of an inflammatory kind, whatever ſymptoms may be ſuperadded. It does not, indeed, always run the courſe of inflammatory affections; but frequently produces ſuch an obſtruction of the paſſage of the air, as ſuffocates, and thereby proves ſuddenly fatal.

It particularly proves fatal, in conſequence of the trachea being obſtructed by a membranous ſubſtance lining the inſide of it, and very nearly approaching in appearance to the inflammatory exudation often diſcovered on the inteſtinal canal in thoſe dying of enteritis.

If we judge rightly of the nature of this diſeaſe, it will be obvious, that the cure of it requires the moſt powerful remedies of inflammation to be employed upon the very firſt appearance of the ſymptoms. When a ſuffocation is threatened, whether any remedies can be employed to prevent it, is not yet determined by ſufficient experience: but it is evident, that in certain caſes the life of the patient can be preſerved only by the removal of that matter which forms a mechanical obſtruction to the paſſage of air through the trachea.

The accounts which books have hitherto given us of inflammations of the larynx, and the parts connected with it, amount to what we have now ſaid; and many inſtances are recorded of the diſeaſe happening in adult perſons: but there is a peculiar affection of this kind happening to infants, which has been little taken notice of till of late years. Dr. Home is the firſt who gave any diſtinct account of the croup. He has not, however, ſtated a material circumſtance on which ſome late writers inſiſt, as will be preſently ſeen, namely, that this diſeaſe is infectious.

The croup ſeldom attacks infants till after they have been weaned. After this period, the younger they are, the more they are liable to the diſeaſe. The frequency of it becomes leſs as children become more advanced; and there are few inſtances of children above twelve years of age being affected with it. It attacks children of the midland counties, as well as thoſe who live near the ſea; but it occurs much more frequently at certain places than at others. It does not appear to be contagious; and its attacks are frequently repeated on the ſame child. It is often manifeſtly the effect of cold applied to the body; and, therefore, appears moſt frequently in the winter and ſpring ſeaſons. It very

commonly comes on with the ordinary ſymptoms of a catarrh; but ſometimes the peculiar ſymptoms of the diſeaſe ſhow themſelves at the very firſt.

Theſe peculiar ſymptoms are the following: a hoarſeneſs, with ſome ſhrillneſs and ringing ſound, both in ſpeaking and coughing, as if the noiſe came from a brazen tube. At the ſame time, there is a ſenſe of pain about the larynx, ſome difficulty of reſpiration, with a whizzing ſound in inſpiration, as if the paſſage of the air were ſtraitened. The cough which attends it is commonly dry; and if any thing be ſpit up, it is a matter of a purulent appearance, and ſometimes films reſembling portions of a membrane. With all theſe ſymptoms, there is a frequency of pulſe, a reſtleſſneſs, and an uneaſy ſenſe of heat. When the internal fauces are viewed, they are ſometimes without any appearance of inflammation; but frequently a redneſs, or even ſwelling, appears; and ſometimes there is an appearance of matter, like to that rejected by coughing, together with the ſymptoms now deſcribed, and particularly with great difficulty of breathing, and a ſenſe of ſtrangling in the fauces, by which the patient is ſometimes ſuddenly taken off.

Many diſſections have been made of infants who had died of this diſeaſe, and almoſt conſtantly there has appeared a preternatural ſubſtance, apparently membranous, lining the whole internal ſurface of the upper part of the trachea, and extending in the ſame manner downwards into ſome of its ramifications. This preternatural membrane may be eaſily ſeparated, and has been ſometimes found ſeparated in part, from the ſubjacent proper membrane of the trachea. This laſt is commonly found entire, that is, without any appearance of eroſion or ulceration; but it frequently ſhows the veſtiges of inflammation, and is covered by a matter reſembling pus, like to that rejected by coughing; and very often a matter of the ſame kind is found in the bronchiæ, ſometimes in conſiderable quantity.

2. *Cauſes.*] From the remote cauſes of this diſeaſe; from the catarrhal ſymptoms commonly attending it; from the pyrexia conſtantly preſent with it; from the ſame kind of preternatural membrane being found in the trachea when the cynanche maligna is communicated to it; and from the veſtiges of inflammation on the trachea diſcovered upon diſſection; we muſt conclude, that this diſeaſe conſiſts in an inflammatory affection of the mucous membrane of the larynx and trachea, producing an exudation analogous to that found on the ſurface of inflamed viſcera, and appearing partly in a membranous cruſt, and partly in a fluid form reſembling pus.

Though this diſeaſe conſiſts in an inflammatory affection, it does not commonly end either in ſuppuration or gangrene. The

troublesome circumstance of it seems to consist in a spasm of the muscles of the glottis, threatening suffocation.

When this disease terminates in health, it is by resolution of the inflammation, by ceasing of the spasm of the glottis, by an expectoration of the matter exuding from the trachea, and of the crusts formed there, and frequently it ends without an expectoration, or at least with such only as attends an ordinary catarrh. But, in some instances, a salutary termination has very speedily taken place, in consequence of the discharge of the membranous substance from the trachea, even under its proper tubular form.

When the disease ends fatally, it is by a suffocation seemingly depending upon a spasm affecting the glottis; but sometimes, probably, depending upon a quantity of matter filling the bronchiæ, or obstructing the trachea.

3. *Distinctions.*] Without taking part in any controversy on the subject, we shall here introduce the arguments of those who make a distinction between the inflammatory and spasmodic descriptions of this disease, and who, of course, suggest the necessity of a material difference in the treatment.

Mr. Field, a practitioner in London, has published, in a periodical work, some remarks, "on the different kinds of disease which have been known under the general name of croup, and also on the nature of the malady as to contagion."

"It has been stated by authors," says he, "that there are *two kinds* of this disease, the one *spasmodic*, and the other *inflammatory*. Of the propriety of this distinction I am at present well satisfied, and am only concerned, that two diseases, so extremely different in their causes, and consequently in their mode of treatment, should be confounded under one and the same title; a circumstance which has an evident tendency to mislead the practitioner, and which has undoubtedly been the reason why we find such very opposite modes of cure recommended by different writers, and each with a confidence derived from some degree of experience.

"That the symptoms of the two diseases bear considerable resemblance, will readily be allowed; nevertheless, there are evidences of difference, I think, sufficiently strong to enable an attentive person to discriminate them. These marks of distinction I shall endeavour now to describe, and, to give them the greater effect, shall contrast one with the other.

"The *spasmodic* croup always attacks suddenly, and usually in the night. The attack of the inflammatory croup is sometimes equally sudden, but more generally gradual, being preceded a few days by slight feverish symptoms, and a teasing short cough, not however sufficiently important to create the smallest uneasiness in the friends of the patient. The spasmodic croup often intermits; and in these intervals, both the respiration and the cough, if any exists, are free from its usual characteristic sound: the inflamma-

tory, on the contrary, when once completely formed, never intermits ſo as entirely to loſe its diſtinguiſhing mark, particularly in coughing; add to which, the heat, frequency of pulſe, and other ſymptoms of *pyrexia*, are found in the latter in much greater degree than in the former. Dr. Ruſh has mentioned ſeveral other marks of difference; but as they apply chiefly to the effect of remedies, and to the later ſtages of the diſeaſe, it is not judged neceſſary to inſiſt upon them here, it being in the firſt attack of this malady, that a due diſcrimination becomes ſo extremely important; that being the time in which the application of powerful and deciſive remedies is moſt conducive to the relief of the afflicted, a delay of a few hours being frequently the cauſe of irreparable injury.

"Every author that I am at preſent acquainted with, has denied this diſeaſe to be of an *infectious* nature. In a former paper on this ſubject, I have taken the liberty to ſuggeſt my doubts as to this opinion being well founded, for which I have there aſſigned reaſons; ſince that time, my particular attention has been given to that point, and I am ſorry to add, that increaſed experience has tended to confirm me more ſtrongly in the opinion, that the true *cynanche trachealis* is a contagious diſeaſe. I have ſince met with repeated inſtances of its occurring in the ſame family, and that after ſuch an interval as we moſt uſually find contagious diſeaſes to require in order to produce their morbid effects, namely, from ſix to ten days: whether the above opinion be well or ill-founded, I would ſtrongly recommend to practitioners to avoid the danger of communication, by requeſting that every child may be removed, if poſſible, from the ſame houſe; or, at all events, be prevented entering or coming near the ſick chamber.

"It has been ſaid that this diſeaſe has occaſionally been met with in adults. When this has been the caſe, I am very much diſpoſed to think, that it was not the inflammatory, but the ſpaſmodic croup; in confirmation of which opinion, I have never heard of its having proved fatal to them."

Mr. Leeſon, of Grantham, who writes in the Medical and Phyſical Journal, laments, that, in the narration of medical facts, an unjuſt preference is given to ſuch as have had a favourable iſſue; while unſucceſsful caſes, however intereſting in their progreſs, or important in their event, ſeldom are brought before the public eye.

"I have been led," ſays he, "to theſe reflections by ſome accounts I have lately ſeen, of the ſucceſsful treatment of the croup. Judging from theſe deſcriptions, a perſon would naturally conclude the croup to be a diſeaſe of long duration and eaſy management. As by one author we are informed, that mercury employed, ſo as to produce ſalivation, effectually cures: another is confident of the ſucceſs of a lotion made with the ſpiritus ætheris vitriolici

compositus: while a third relies upon a decoction of seneka. No doubt, all these remedies might be productive of good effect, if the rapid progress of the complaint allowed them to be fairly tried. But I am afraid, such is the celerity of the dangerous symptoms, that few practitioners have had the pleasure to experience a recovery from the true croup. It may be right, I should define what I understand by the *true croup*: by this term, then, I would express a disease, arising from an extravasation of coagulable lymph within the trachea and bronchial tubes, which occasions that peculiar sound in inspiration we should expect, was the breath drawn through a narrow pipe. This is preceded by a slight inflammatory stage, of which the symptoms are so little troublesome, as seldom to be observed.

"In considering the cynanche trachealis, it is necessary to premise, that two distinct diseases appear to have been classed by writers under the same name. The one arising from a spasmodic stricture of the parts surrounding the trachea; the other depending on extravasation, the consequence of inflammation. In the first, the exhibition of an emetic seldom fails to remove the complaint, while the second bids defiance to every effort of art. In the spasmodic croup, the attack is sudden, generally commencing some time after the patient has been in bed; it is accompanied by remarkable anxiety, and oppression about the breast; a hoarse shrill voice; great redness of the countenance (which expresses most grievous uneasiness); quick and difficult respiration, and a soft pulse. Upon the operation of an emetic, these symptoms gradually subside; the patient sinks into a slumber, and awakes with little remains of the complaint. I am acquainted with a family, in which this complaint has attacked more than once, each child of a numerous offspring, and has never failed to disappear upon the operation of an emetic.

"Very different is the progress of the *inflammatory* croup; in this, the first appearance of disease is of such an insidious nature, as seldom to create any alarm, being considered by the attendants as a slight cough accompanied with hoarseness. By degrees the roughness of the voice becomes more remarkable, the breath is drawn with difficulty, as if through a narrow pipe, occasioning a peculiar shrill sound *; there is a constant feverish heat upon the skin, together with a profuse perspiration about the head and face, insomuch that the sweat stands in drops upon the countenance, which exhibits the greatest anxiety; the pulse is quick and soft; the lips are pale, frequently livid; the changes of countenance are sudden and frequent; at one time it is red, in an instant it is pale

* Febris excitatur ad liberandum corpus a muco, & membrana extra vasa. *Home de Suffocatione Stridula.*

as a corpſe. The progreſs of this diſeaſe, from its commencement to its termination, as far as you may depend upon the information of nurſes, never exceeds more than four or five days: from the firſt appearance of danger, the patient ſeldom continues more than thirty-ſix hours, rarely ſo long. I have been obliged to refer to nurſes, as I believe few medical men have witneſſed the firſt attack of croup, it being too inconſiderable to merit their attention."

Having enumerated the pathognomonic ſymptoms of the croup, Mr. Leeſon details two caſes, which occurred to him, and which we will notice hereafter.

An elaborate and ingenious account of the croup, as it appeared in the town and neighbourhood of Cheſham, in Buckinghamſhire, in the years 1793 and 1794, by Mr. RUMSEY, of that place, is inſerted in the Tranſactions of the London Society for improving Medicine and Surgery. It is ſo judiciouſly written, and points out ſuch important peculiarities that we ſhall preſent it to the reader with very little abridgement.

After ſtating that the diſeaſe in queſtion was not confined to the town of Cheſham, which lies in a valley, but likewiſe ſhewed itſelf, with equal violence, upon the neighbouring hills at the diſtance of five or ſix miles from the town, Mr. Rumſey proceeds thus:

"The ſubjects were children from within the firſt to the fourteenth year. Authors ſpeak of twelve years being the extent of age in which the complaint takes place, but I have met with it in a boy of thirteen, and in a girl fourteen years old.

"It attacked very different conſtitutions. Some were of pale phlegmatic temperaments, but this was by no means the caſe generally; for many were fine, healthy, robuſt children.

"The diſeaſe crept on the patient almoſt imperceptibly, beginning with a hoarſeneſs or wheezing, a ſhort dry cough, and ſometimes a rattling in the throat when aſleep. Theſe ſymptoms were at firſt but little attended to, owing to the general health of the child appearing good, the countenance not altered, the appetite and ſpirits nearly as uſual, excepting at intervals. As the diſeaſe advanced, the wheezing became more obſervable, the cough more or leſs troubleſome, the voice in coughing or ſpeaking acquired a ſhrill ſound, reſpiration was performed with a wheezing or ſometimes croaking noiſe, and at length grew very diſtreſſing and laborious. At the beginning, or in ſlighter caſes, the ſound of inſpiration reſembled the paſſing of air through a piece of muſlin; afterwards it was as if the noiſe came from a brazen tube. The cough was attended with a peculiar ſhrill ſound, even at an early period of the diſeaſe, (ſee Caſe 14.) as well as the voice, where there was not a perfect hoarſeneſs. I have heard thoſe about the ſick com-

pare it to the noiſe which a fowl makes when caught in the hand, or having upon it the diſeaſe to which that claſs of animals is liable, called the croak.

" This peculiarity, however, is not eaſily expreſſed by words, but a knowledge of it is readily acquired by obſervation. I have known the ſound of the cough alone greatly ſhock an unfortunate parent, who had already loſt one child with the complaint.

" It ſometimes happened, that ſymptoms which appeared trifling for two or three days ſuddenly increaſed, and the diſeaſe advanced ſo rapidly, as to prove fatal before many hours had elapſed. See Caſe 1.

" The difficulty of breathing ſtruck me as being different from what we uſually obſerve, when there is an inability fully to expand the lungs; for in the croup the peculiar manner in which the patient breathed indicated an obſtruction in the paſſage of the air to the lungs. See Caſe 9.

" In ſome of the patients this ſymptom increaſed very much by paroxyſms, occaſioning extreme anxiety and inquietude, ſo that they ſeemed at theſe times to be in danger of immediate ſuffocation."

After repreſenting that a conſiderable aggravation of all the ſymptoms took place during the night, and that this indeed was the caſe throughout the diſeaſe, the author ſays,

" At firſt the cough was dry, but in the courſe of the diſeaſe, viz. by the third day, or ſooner, the paſſage of the air was obſtructed by viſcid matter in the trachea, ſome of which was occaſionally thrown up by cough or retching; and according to the quantity thrown up reſpiration was more or leſs relieved. Several children brought up portions of a film, or membrane of a whitiſh colour, reſembling the coagulated matter which was found in the trachea of thoſe children whoſe bodies were opened. This was thrown off by violent coughing or retching; and the efforts made to diſlodge it were often ſo diſtreſſing, that the child appeared almoſt in a ſtate of ſtrangulation. This was ſucceeded by an abatement of all the ſymptoms, until a freſh quantity of the ſame ſubſtance was formed, when the diſtreſs recurred as before.

" Moſt of the caſes which occurred in November, and afterwards, were attended with inflammation and ſwelling of the tonſils, uvula, and velum pendulum palati, and frequently large films of a white ſubſtance were formed on the tonſils. The ſwallowing was uſually leſs impeded than might have been expected from the degree of diſeaſe which exiſted in the throat. Dr. Cullen obſerves, " when the internal fauces are viewed, they are ſometimes without any appearance of inflammation, but frequently a redneſs and even a ſwelling appear." But much more diſeaſe in

these parts accompanied the croup in many of the cases which occurred in this neighbourhood.

"By the end of the second, or on the third day, symptoms of affection of the system took place, as white tongue, thirst, increased heat, and frequent pulse; and the disease advanced rapidly, not merely from violent general affection, but from the influence it had on the organs of respiration, the difficulty of breathing becoming now very distressing, the countenance being often flushed, attended with great inquietude and a continual inclination to change from place to place. The child, at the same time, eagerly put its fingers into its mouth, as if to pull away something which stuck in the passage.

"The senses were retained throughout the disease, until the child was at the point of death, which was preceded by the red flushing of the face changing to a livid hue, and the hands at the same time acquired the same colour. The patient was cut off apparently by suffocation.

"In the first case the disease terminated fatally on the third day. None of the patients whom I have attended have died at an earlier period. Although the patient has been said to have sometimes died within twenty-four or thirty hours after the disease began, yet I have found upon closer examination, that the disease had existed longer, and that the attack had been carelessly dated from the time that severe symptoms appeared. A more speedy termination of the croup is however mentioned by some physicians, who have written on the disease. Where it has proved fatal, I have usually seen it run on to the fourth or fifth day, or even later. Where considerable portions of the membranous film, formed on the surface of the trachea, were thrown up, life was protracted still longer, in one case even to the tenth day. See Case 9.

"The affection of the system was different in degree, and irregular in its progress. It usually increased towards night. In some of the earlier cases this wore rather an inflammatory appearance, and the skin was hot and dry. Afterwards, however, this was not observable, and the skin was often relaxed and moist throughout the disease.

"This morbid affection of the system in the croup appears to be symptomatic. I have not seen any danger arising merely from these symptoms, which commonly took place in a degree proportionate to the state of respiration. The danger is not to be estimated by the general state of the body; for there may be imminent danger, although hardly any symptoms of general disease have been observed. See Case 1. It is particularly necessary for those practitioners who have seen but little of the croup, to attend to this. If they expect to meet with a considerable affec-

tion of the ſyſtem, they will not be aware, that ſo formidable a diſeaſe has begun its progreſs; ſince, for the firſt day or two, the child has only a ſlight cough and hoarſeneſs, is in good ſpirits, perhaps even running about the room and enjoying its amuſements; many inſtances of which I have known.

"The ſame appearances have been found upon diſſection by the different practitioners, who have examined the bodies of children who have died of the croup, ſo that no doubt remains with regard to the ſeat of the diſeaſe. I had an opportunity of examining three, and found a film or membranous ſubſtance lining the cavity of the trachea: in two of them this was lying looſe, but in one it adhered firmly at the lower part.

"This diſeaſe is conſidered as an inflammation of the phlegmonous kind by Dr. Home, the firſt author who has diſtinguiſhed it from other inflammatory affections of the throat, and he has called it ſuffocatio ſtridula. Dr. Cullen was likewiſe of the ſame opinion, and under the name cynanche trachealis has arranged it in the order phlegmaſiæ, claſs pyrexia.

"In all the inſtances in which I have had an opportunity of ſeeing the diſeaſe, it was of the inflammatory kind; unleſs Caſe 12. Several of my patients had, notwithſtanding, conſiderable ſpaſmodic affection of the reſpiration, blended with the other ſymptoms, if ſudden attacks by paroxyſms be ſufficient evidence of ſpaſm. But this, I apprehend, was a ſymptomatic effect (although truly alarming), ariſing from the irritation which the inflammation excited.

"Indeed *ſpaſm and inflammation are two diſeaſes ſo totally different from each other*, that there does not appear to me any propriety in deſcribing under one name two diſeaſed actions which in their nature are ſo diſtinct. That there is a diſeaſe called croup, in which there is an increaſed ſecretion from the mucous glands of the trachea, and alſo a membrane-like ſubſtance formed on its ſurface, is ſufficiently proved by the obſervation of different practitioners. Now if ſimilar external marks of diſeaſe occaſionally ariſe where there are none of theſe internal morbid appearances, may we not conclude, that theſe are two diſeaſes which in their nature are totally diſtinct from each other, rather than two ſpecies (or modifications) of the ſame diſeaſe?

"It appears to me that the croup is an inflammation of its own kind. If it conſiſted in common inflammation, we might expect to find the ſame appearances (that is, the ſame kind of concretion on the ſurface of the trachea) every day, as its mucous membrane is ſo frequently the ſubject of inflammation attended with an increaſed ſecretion. The matter, however, of which this ſubſtance is formed, poſſeſſes different properties from thoſe of the mucus which is thrown out upon the membrane of the noſe, or of the trachea in common catarrhal affections.

" I think it probable, that the film which we find in the croup is not formed by a ſecretion from the mucous glands, but is an exſudation from the exhalant arteries. Upon this principle we can more eaſily account for ſuch film not being found in common catarrhal affections, in which the mucous glands are perhaps more the ſeat of the diſeaſe. It is, therefore, analogous to the inflammatory exſudation in the inflammation of other internal membranes firſt deſcribed by the late Dr. Hunter."

Mr. Rumſey ſays, the croup has been ſometimes thought *infectious*, but he has not yet formed a decided opinion upon this. He has known two, and ſometimes three, children in the ſame family to have been ſeized with it; whilſt, on the other hand, he has occaſionally ſeen two or three in a family eſcape, while one or two of the others have died of the diſeaſe; no pains being taken to keep the healthy from the ſick.

" When a diſeaſe," ſays he, " is *epidemic*, it is ſometimes difficult to determine whether it be communicated by infection; or whether ſeveral people have the diſeaſe in conſequence of their being expoſed to the ſame exciting cauſe. It is rather remarkable, that although there were between twenty and thirty children in our workhouſe, only one had the diſeaſe. Upon the whole, I met with above forty caſes. The croup has but rarely made its appearance in this neighbourhood. My father, who has been in conſiderable practice here above forty years, does not recollect ſeeing more than eight or ten caſes."

4. *Treatment.*] As we ſuppoſe the diſeaſe to be an inflammatory affection, ſo we attempt the cure of it by the uſual remedies of inflammation. Bleeding, both general and topical, has often given immediate relief, and, by being repeated, has ſometimes cured the diſeaſe. Bliſtering, alſo, near to the part affected, has been found uſeful. Upon the firſt attack of the diſeaſe, vomiting, immediately after bleeding, ſeems to be of conſiderable uſe, and ſometimes ſuddenly removes the diſeaſe. But emetics are ſtill more uſeful in advanced periods. By the employment of theſe, the matter obſtructing the trachea, and inducing ſpaſmodic affections, has often been ſucceſsfully removed, when the ſituation of the patient ſeemed to be almoſt deſperate. And as in the progreſs of the diſeaſe freſh effuſions of this matter are very apt to take place, the frequent repetition of emetics becomes neceſſary. It is often adviſable to have recourſe to thoſe operating the moſt expeditiouſly, ſuch as vitriolated zinc, even in large doſes. In every ſtage of the diſeaſe, the antiphlogiſtic regimen is neceſſary, and particularly the frequent uſe of laxative clyſters. Although it has been ſuppoſed that a ſpaſm affecting the glottis is often fatal in this diſeaſe, yet antiſpaſmodic medicines have not been deciſively recommended, until, after repeated experi-

ence of their good effects. This important point was eſtabliſhed by Mr. Kendrick, an ingenious ſurgeon at Warrington.

Some indeed have ſtrongly recommended the uſe of aſafœtida under the form of injection; others have placed great confidence in oil or oily mixtures taken by the mouth: and it is ſuppoſed that benefit is derived from tepid bathing, and from the employment of vitriolic ether, both externally and internally. But of all remedies of this claſs, the principal one is opium; an account of the uſe of which in this diſeaſe, Mr. Kendrick accompanies with the following remarks.

"It frequently happens (ſays he) that this diſeaſe puts on for ſome days the appearance of a common catarrh; but in which the difficulty of breathing increaſes generally in the evening, and a ſenſe of ſuffocation is perceptible, attended with a ſmall quick pulſe, often 130, 140, or 150, in a minute. Slight rigors, ſucceeded by heat and flushing in the face, are frequent. And here let it be remarked, that in no one inſtance have I ever found the pulſe *hard*, *full*, and *ſtrong*, as deſcribed by ſome authors, but quick, hard, and ſmall. Neither, reaſoning from circumſtances, would one be led to expect it; as, whether more or leſs of inflammation exiſt, the tranſmiſſion of blood through the lungs muſt be too much impeded to allow a *full* or *ſtrong* pulſe.

"As the diſeaſe goes on, the difficulty of breathing increaſes, and with it that peculiar noiſe, which, although difficult to be deſcribed, cannot eaſily be miſtaken by any one who has once heard it. The cough attending it, although frequent and violent, does little or nothing towards diſlodging the inſpiſſated lymph. The proſtration of ſtrength is for the moſt part ſudden and great; and I ſuſpect that it is, in general, greater, in proportion to the degree of inflammation; as in ſome inſtances where there was reaſon to ſuſpect but little inflammation, the patients have played with other children till within two or three hours of their death. In theſe caſes, likewiſe, convulſions generally uſher in the fatal ſcene: and at all times, whether the diſeaſe be purely inflammatory or not, a great degree of irritability exiſts in the ſyſtem.

"Cold, or cold and moiſture combined, have been ſuppoſed the principal cauſes of this diſeaſe; although it by no means appears that it has occurred as an epidemic in ſeaſons remarkably cold or moiſt. Why, too, the application of cold to the trachea ſhould at one time cauſe common catarrh, at another, cynanche trachealis, it is not eaſy to explain.

"With regard to the queſtion, is it, or is it not, *infectious?* I feel myſelf incompetent to anſwer, having had no good reaſon to ſuppoſe the affirmative. In two of the caſes I had under my care, the parents had loſt each a child, about two months before, of the ſame complaint.

"With reſpect to the cure, the following method is

what has anſwered beſt in my hands. If the diſeaſe take place in a child of a plethoric habit, as is moſt commonly the caſe, blood ſhould be immediately taken either from the arm or jugular vein, and that in proportion to the violence of the ſymptoms. Topical bleeding by leeches applied to the throat is likewiſe of very conſiderable ſervice, after which, a bliſter extending acroſs the throat ſhould follow. In the mean while the inſpiſſated lymph ſhould be diſlodged if poſſible by emetics, which ſhould be repeated as often as an increaſed difficulty of breathing indicate a freſh accumulation. For this purpoſe I have generally uſed the tartariſed antimony, but it will be found that more conſiderable doſes of it may be adminiſtered in this diſeaſe than any other, to produce the deſired effect. Perhaps other emetics might be more ſuddenly effectual, but its taſteleſſneſs has been my motive for preferring it. Of late the *Seneka Root* has been ſtrongly recommended for this purpoſe by an American gentleman; but of this I have had no experience. It is almoſt needleſs to ſay, that it is neceſſary to keep the bowels open through the whole diſeaſe.

"The warm bath has been recommended by many in this diſeaſe, but I have never ſeen much benefit ariſe from its uſe.

"Theſe are the moſt material of the remedies that can be employed when the diſeaſe is purely inflammatory; but as I apprehend it is often but little ſo, and frequently *almoſt entirely ſpaſmodic*, I beg leave to offer, with diffidence, what, ſo far as I know, is a new remedy. I mean *opium*, which, in a number of caſes during the year 1794, when this diſeaſe raged in our neighbourhood, and alſo on various occaſions ſince that time, has been attended with ſucceſs. This, at leaſt, may be relied on, that at that time, whenever it was not uſed, the diſeaſe proved invariably fatal, and that under its uſe *by far the greater number recovered.* What led me firſt to employ it was the inefficacy of other remedies, and a ſuſpicion, from the ſuddenneſs with which death took place, that ſpaſm more than inflammation was the cauſe. I thought therefore, that by leſſening the irritability of the ſyſtem at large, I might, perhaps, put off the fatal iſſue; and my ſucceſs anſwered my moſt ſanguine expectations.

"For this purpoſe pretty large doſes are generally requiſite. Five, ſix, or eight drops of tinct. opii may be given every two hours, until ſleep, or a remiſſion of the ſpaſm, take place. This, however, I never thought it prudent to do until ſuch time as the uſual evacuations had been previouſly made; and through the whole diſeaſe I had recourſe to emetics once or twice a-day if there appeared reaſon to ſuſpect lymph or mucus in the trachea. It has in general happened, that in three or four days the farther continuance of opium became unneceſſary."

To the foregoing judicious obſervations we ſhall add the different modes of treatment, practiſed and recommended by thoſe

gentlemen who have ſtepped forward as advócates for the diviſion of that diſeaſe into two diſtinct ſpecies. Mr. Field ſays,

" The firſt and moſt important curative indication in the treatment of the *true* or *inflammatory* croup (for to this our preſent obſervations will be confined) is, to diminiſh the quantity of blood. In a former paper on this diſeaſe, I gave a caution againſt the uſe of the lancet, from an apprehenſion that the early debility, which had been obſerved to come on, would render general bleeding an unſafe and improper practice, and that our evacuation of blood ſhould be only topical, by means of leeches; which, however, was adviſed to be freely and vigorouſly purſued. Since that time I have had opportunities of obſerving, that the lancet may not only be ſafely, but even advantageouſly employed, and that it ſhould never therefore be omitted, when medical advice is required in the earlier ſtages of the diſeaſe, from two to four or five ounces of blood being taken away, according to the age and ſtrength of the patient; much caution is nevertheleſs requiſite in repeating this operation. If any abatement of ſymptoms takes place after the firſt bleeding, which frequently happens, I ſhould certainly think it unneceſſary to repeat that evacuation; but if an evident exacerbation ſhould afterwards come on, it will be generally proper to do ſo; in this caſe a topical diſcharge, by means of leeches, appears to me much to be preferred to a general one. Allow me here to give a caution relative to the prognoſis in this diſeaſe. The means now recommended in the early ſtage of it, being frequently followed by a conſiderable and very flattering appearance of recovery, the practitioner may be ſo far deceived as to be encouraged himſelf, and, in conſequence, to encourage the friends of the patient, with great expectation of a favourable iſſue; but in this he cannot be too much on his guard, nor ſhould he conſider the danger to be paſt, until three or four days have elapſed without a return of ſymptoms, by which time the patient will have made conſiderable progreſs towards recovery.

" Our next ſubject will be an enquiry into the uſe of bliſtering in the cure of this diſeaſe. I have, on a former occaſion, taken notice of Dr. Home's objection to the early application of bliſters to the affected parts, as liable to do injury by their immediate ſtimulus. I am well ſatisfied, from later obſervations, that this objection is well founded, although ſufficient attention does not ſeem in general to have been given to it; and whoever conſiders the extreme vicinity of the diſeaſed part to the external ſurface of the throat, muſt ſurely coincide with me in opinion, that the application of a bliſter immediately to the part muſt act as a local ſtimulus, and therefore muſt increaſe, rather than diminiſh inflammation. Veſicatories ſhould, for theſe reaſons, be either entirely omitted, or elſe applied only to diſtant parts. Whether they will in the latter caſe be of any ſervice, I am at preſent unable to aſcer-

tain. Blisters were applied in only two of the present cases, and in those there is not the smallest reason to suppose, that they contributed in any degree to the cure; in the last of the two, the blister scarcely took any sensible effect on the skin.

"The situation of the trachea with respect to the external integuments, which I have above alluded to, suggested to me an idea that refrigerating, and also sedative remedies, might be used externally with advantage. In the third and fourth cases now recited, I made trial of an embrocation with that intention; how far the success of those cases is to be attributed to this remedy, it is impossible to say; it is sufficient, however, to enable me to recommend this and similar applications to further trial, and also emollient and sedative cataplasms and fomentations. The occasional use of emetics, so as to produce their full effect, and their constant use so as to excite nausea, as far as has hitherto appeared, seems to be attended with good consequences. The body should be kept at all times in a soluble state, but any considerable evacuation by stool is better avoided, its immediate tendency being to debilitate, without apparent advantage, in relieving the patient. The warm bath, either partial or general, may be employed with probability of benefit."

The author describes several cases treated by venesection, leeches, blisters to the sternum, antimonial emetics, laxatives when necessary, and an embrocation to the throat, by means of linen cloths, constantly wetted with

(No. 82.) ℞. Aq. ammon. acet. une. ij.
Spir. æther. vitr. comp. unc. j. Misce.

Dr. Huggan, a writer on the croup, objects strongly to some parts of Mr. Field's practice, particularly against too copious a venesection in children, which, he says, will hasten a fatal termination of the disease.

"In a manuscript copy of the late Dr. Gregory's Lectures," says he, "I found a caution respecting bleeding in children, even with leeches, as being apt to bring on fits. Now, if the learned professor's admonition was the result of experience, and a case which I myself once saw, leaves me little room to doubt it, what have we not to dread from taking away blood in a large stream from infants?

"The symptoms of croup being so very alarming, often threatening immediate death, demand the most speedy as well as judicious exertions of the physician to combat them.

"Former experience having taught him, that blood-letting has, in most instances, alleviated all the violent symptoms of the disease; and thinking it unsafe to trust to any other remedy, however equally efficacious that may be, in producing the same good effect, from the fear of its not being as quick in its operation, his own professional character, perhaps, being at stake, in case of

failure, from trying a mode oppoſite to that which has received the ſanction of the greateſt names in the profeſſion, he is therefore compelled by a ſort of neceſſity to have recourſe to bleeding, as the ſpeedieſt means of averting the preſent danger, regardleſs of any future bad conſequences that may follow this meaſure. Experience authoriſes me to ſay, that *opium in the form of tincture* will, if in a doſe proportionate to the violence of the diſeaſe, give relief as ſpeedily as veneſection or any other remedy."

In adopting the latter remedy, Dr. Huggin coincides with the excellent practice recommended firſt to public notice in a communication from Mr. Kendrick.

"From the little that has fallen within my own obſervation," continues Dr. Huggan, "I cannot too forcibly deprecate the uſe of the lancet in croup."

Mr. Rumſey found calomel, in alterative doſes, as recommended by Dr. Ruſh, a uſeful remedy, as appears by the particulars of the treatment which he annexed to his account of the diſeaſe. Alluding to eight caſes, which we ſhall preſently introduce to the reader's notice, he ſays,

"The event of theſe, and of many more caſes which I afterwards met with, convinced me that the adage "ſi quid movendum, principio movendum," was in no inſtance more applicable than in reference to the preſent diſeaſe.—Yet the trifling appearance of the croup in its early ſtage ſo rarely excited the apprehenſions of parents, that I had very little opportunity of fairly trying the effect of medicine, until the diſeaſe had advanced to ſuch an height as too frequently to baffle all our exertions. The antiphlogiſtic plan (particularly bleeding from near the part); if adopted at the commencement of the diſeaſe, appeared to me the mode of proceeding which afforded the moſt hopes of ſucceſs. But when I found ſo much diſeaſe about the tonſils, as I have already deſcribed, bleeding from any large vein appeared to me altogether improper; and the more ſo when I conſidered the kind of diſeaſes (ulcerous ſore throats) which, at this time, we met with in the country. In two caſes, where nothing beyond ſlight inflammation and ſwelling of the tonſils accompanied the other ſymptoms, having been conſulted pretty ſoon, I applied to one patient ſix, and to the other three leeches upon the throat, but without ſucceſs. In converſation with my neighbour Mr. Suthery, an ingenious and liberal practitioner, he obſerved to me, that in September he loſt a patient in the croup, and deſired the mother that if any of the other children ſhould have any appearance of the ſame complaint they would acquaint him immediately; in a few days after, a boy in this family, ſix years old, was ſeized with the croup, and Mr. Suthery was called in upon the ſecond day of the diſeaſe: he bled the child, and proſecuted the antiphlogiſtic plan, yet with this treatment he died.

"I usually found my patient in a situation in which the only rational indication of cure was to promote the expectoration of that matter which was accumulating on the surface of the trachea. This I endeavoured to do by giving gum ammoniac, squills, and other expectorants; or small doses of ipecacuanha; or an antimonial preparation, both in order to promote this intention, and likewise to keep up a determination to the skin: having previously given an emetic, which was repeated in the course of twenty-four hours if an opportunity offered.

"A blister likewise, applied either to the throat or breast, was a part of the usual practice which I followed for some time; but not perceiving the least advantage from this application, after repeated trials I discontinued it.

"Among other things, the warm bath was made use of by many patients and repeated; sometimes fomentations to the throat and breast with emollient cataplasms were tried. And likewise, where it could be managed, the vapour of warm water was inhaled by means of Mudge's inhaler.

"The ordinary mode of treatment proving inefficacious, I thought myself justified in stepping out of the common track; and therefore gave the cicuta in several instances, but with no better effect. Where the feel of heat did not forbid, and spasmodic affection accompanied the other symptoms, I gave æther in small doses, and repeated it; but my efforts did not yet avail. Dr. Cullen says, 'although we suppose that a spasm of the glottis is often fatal in this disease, I have not found antispasmodic medicines of any use.' —I had, at length, the satisfaction of seeing a child recover after taking the tinct. scillæ and vin. ipecacuanhæ in such doses as to excite vomiting, which were repeated every four, five, or six hours*. Indeed I found vomiting the only means of dislodging the matter which was collected in the trachea: for children are so averse to expectorate, that if they are prevailed on to take such medicines as have a tendency to produce this effect, they will endeavour as much as possible to check this evacuation.—I adopted the same practice in several instances afterwards, but could only procure temporary relief, which was in proportion to the quantity of mucus brought up.—In conversation with my brother on the subject, he mentioned that Dr. Rush had recommended calomel in the croup. I was highly gratified with this information, and determined to try the effects of calomel the first opportunity. Yet as the doctor recommends it to be 'repeated in smaller doses every day,' it is pretty evident that the disease appeared in a milder form in Philadelphia than it has here: for before I saw the patient the disease was so far advanced, that had I confined myself to this mode of admi-

* See Case 10.

niſtering this medicine, there would have been no chance of repeating the doſes many times.

"However, I gave the calomel in what I thought the moſt efficacious manner, and had the ſatisfaction of ſeeing ſome patients recover under ſuch treatment. I have not had ſufficient experience to determine whether it is ſo powerful an antidote in the croup as the author, whoſe practice I adopted, ſuppoſes. Having ſtated all the caſes in which the mercurial treatment was fairly tried by me, I muſt refer the reader to them, and leave him to draw his own concluſions."

CASES.

Mr. Rumſey here appriſes us that the firſt eight of the following Caſes occurred between the beginning of March and the end of September, in the year 1793.

CASE I. "A girl, about four years old, was taken, March 9, 1793, with a wheezing and very ſlight cough; her conſtitution in every other reſpect being healthy. March 12, I accidently ſaw her, and, being ſtruck with the manner in which ſhe breathed, I noticed this circumſtance to the mother, who ſaid that the child was pretty well in health, but had had a very ſlight cough, and had breathed with this kind of difficulty for two or three days, and now and then, during this period, had had an inclination to retch. From the difficult reſpiration, and peculiar ſhrill ſound of the voice, I judged that the child was labouring under the ſuffocatio ſtridula, or croup, and recommended an emetic, which was given in the evening. The child paſſed the day without any appearance of general diſeaſe; and after taking the emetic, ſhe ſeemed to be ſomewhat relieved in her breathing. No material alteration took place until between five and ſix o'clock in the morning, when the reſpiration became very laborious, and in about three hours the child died. A bliſter was laid upon the breaſt, but we had not time to adminiſter any internal medicines.

"The next day I opened the body. No morbid appearance was obſervable in the cavity of the thorax, or in any of its viſcera. I then laid bare the trachea, and opened it longitudinally from the glottis to its bifurcation, and here the effects of diſeaſe were ſufficiently obvious, and ſuch as enabled us at once to account for the child's death. About two inches of the upper part of the cavity of the trachea was lined with a membrane which in appearance very much reſembled the buff on the ſurface of the blood drawn from patients in pleuriſy, and other inflammatory complaints. This was evidently the coagulated lymph which had been thrown out, and coagulated on the ſurface of the mucous membrane. The lower part of this cavity was covered with a purulent mucus

in conſiderable quantity, which appearance likewiſe was traced to the beginning of the ramifications. The mucus and film being removed, the mucous membrane ſhewed marks of ſlight inflammation.

"It is evident that this child died from ſuffocation, the paſſage of the air to the blood being obſtructed by the film and mucus which covered the internal ſurface of the trachea. But it is worthy of notice, that, as long as the lungs were tolerably ſupplied with air, no general affection of the ſyſtem was excited, for the child appeared chearful even to the laſt day.

Case 2. "To this child I was called June 13, eight A. M. This was a fine beautiful boy, three years old, who had not had the meaſles (a diſeaſe very prevalent at the beginning of the ſummer). I found him labouring hard for breath, a great wheezing, or rather croaking ſound, attending reſpiration; he had ſome cough, and a ſhrillneſs of voice upon ſpeaking or coughing; his countenance was fluſhed, pulſe frequent, ſkin rather hot and moiſt. The mother informed me that a trifling cough, with hoarſeneſs, had been coming on two or three days; that ſhe obſerved a difficulty of breathing all yeſterday, which increaſed towards night; the appetite had been more conſiderable than uſual until laſt night, when a little ſickneſs came on, and the difficulty of breathing afterwards increaſed. During the early part of the night the child ſlept, but about four o'clock in the morning the breathing became very laborious, and continued growing worſe until the time when I ſaw him. I immediately laid a bliſter acroſs the throat, and ordered a teaſpoonful of the oxymel ſcillæ and vinum ipecacuanhæ to be given often, with a view to diſlodge ſome of the viſcid phlegm which impeded reſpiration.

"In four hours after I ſaw the child again, the diſeaſe had made a rapid progreſs, only two tea-ſpoonfuls of the medicine had been ſwallowed, and but little elſe. The countenance was much altered, the red fluſhing was changed to a darkiſh or livid hue, the eyelids half cloſed, unleſs when rouſed; reſpiration very laborious, pulſe weaker and ſmaller; and the whole appearance was ſuch as indicated a quickly approaching death, which took place in a few hours after.

"The next day I obtained permiſſion to open the body. Neither the cavities of the thorax ſhewed marks of diſeaſe, nor the ſubſtance of the lungs. The pericardium contained an ounce of water, but there was no morbid appearance in the membrane. I laid open the trachea, which contained a great deal of a whitiſh viſcid mucus. Towards the upper part of this canal there were ſome portions of the film, but in leſs quantity than in the former caſe. Upon examining the trachea down to its ramifications, a conſiderable quantity of the ſame viſcid mucus, or phlegm, was obſerved. When the membrane was cleared, ſome veſtiges of inflam-

mation were seen, particularly at the upper part of the trachea, for as we traced it downwards, this appearance was less perceptible. Indeed in neither of these two cases was there so much inflammation observable in the trachea, as might have been expected from the effects of the disease.

Cases 3 and 4. "The next two patients were in one family, one of whom was three years old, and the other fifteen months. They were healthy children, and perfectly recovered from the measles. They both died nearly at the same time, within twenty-four hours from my first visit: the eldest on the fourth, and the youngest on the third day. As soon as I saw them, I laid a blister across the throat in each, but could only get down a small quantity of the oxymel scillæ. They sank so fast as to be incapable of swallowing any thing in a few hours after I left them.

Case 5. "About a fortnight after the above two children died, another child in the same family was attacked with the same disease. This was a boy four years old. I was applied to about the beginning of the second day of the disease, and although the symptoms were slight, the disease was sufficiently characterized. I applied three leeches on the throat, and gave him at two doses oxym. scil. ʒi. at the distance of half an hour between them. This producing no sensible effect, the following was prescribed:

(No. 83.) ℞. Vin. ipecac.
Acet. scillæ aa ʒij.
Syr. simp. ʒi.
Aq. puræ ʒij.
M. Detur coch. larg. omni hora."

Mr. Rumsey here candidly observes, that, in prescribing the above, he was not at that time aware that acids counteract the emetic quality of ipecacuanha.—See Woodville's Medic. Botany, p. 563. and Dr. Irving's Dissertation in the proceedings of the Harveian Society of Edinburgh, for 1784.

"The next day," continues the author, "I found him better; he had taken several doses of the mixture without any other effect than occasioning two or three stools. Only a trifling cough remained; the peculiar wheezing, which had been particularly observable when he was asleep, had been much less the last night than the preceding, and he had rested tolerably well. When I called the following day, there were no marks of disease remaining.

Case 6. "Two more cases occurred in July. One was a fine lusty boy, in his sixth year, not well recovered from the measles, which he had had six weeks before. I was called to this patient early on the third day of the disease. I took from the arm upwards of four ounces of blood, and vomited him with vin. ipecac. and oxymel scillæ; afterwards gave small doses of ipecacuanha, to be repeated every two hours; recommended likewise

the warm bath, and the ſteam of water to be drawn into the lungs; a bliſter was alſo applied acroſs the throat. The next day I found him growing worſe, his breathing was very laborious, particularly by paroxyſms. He had been put into the bath once, but could not be prevailed upon to uſe it a ſecond time; nor would he make uſe of the inhaler. I now gave him half a grain of the digitalis every hour, of which he took four doſes without any effect. The diſeaſe continuing to gain ground, he died the following evening."

Case 7. "This caſe, which occurred in the month of July, was a boy of three years old, of a ſimilar conſtitution to the former, but more weakened by the meaſles. He was bliſtered on the throat on the third day, vomited, and had ſmall doſes of ipecacuanha in a ſaline mixture, but he died on the 5th day of the diſeaſe."

Case 8. "This," ſays Mr. Rumſey, "was a luſty girl, in her fourth year. I found her breathing with conſiderable difficulty, and with a croaking noiſe. She had a troubleſome cough, and hoarſeneſs when coughing or ſpeaking, and ſlight febrile ſymptoms. Ulcerated ſore throats being at this time ſomewhat prevalent, induced me to inſpect the fauces, and I obſerved a ſwelling and no inconſiderable ulcer on the left tonſil, although the child had not diſcovered any pain or difficulty in ſwallowing. The mother informed me, that the girl had been ill four or five days; her complaint began with a ſlight hoarſeneſs and cough, but her general health not being altered, this was conſidered only as a common cold. Theſe appearances however gradually increaſed, the breathing became more affected, which was particularly obſervable during ſleep; and within the laſt two days ſhe loſt her appetite and ſpirits, and was very little upon her feet.

"We gave her an emetic, and after the operation ſhe got a little ſleep, having apparently obtained for a ſhort time ſome relief. But no other medicine could be got down, and ſcarcely any thing elſe. Reſpiration became more and more laborious, and ſhe died within twenty hours after my firſt viſit.

Case 9. "A girl, four years old, on November 10 (being the third day of the diſeaſe), brought up a conſiderable portion of membrane by violent coughing and retching. Here were conſiderable ſloughs on the tonſils. From this time to November 15, four more large pieces of membrane were brought up, each by a very diſtreſſing exertion, as if ſhe was almoſt ſtrangling, but ſucceeded by a diminution of the wheezing and difficult reſpiration for a few hours, until a freſh quantity began to accumulate, when the ſymptoms returned as before. After an emetic the cicuta was given, but on the tenth day of the diſeaſe ſhe died.

"The day after ſhe died I opened the body, and found adheſions in both cavities of the thorax, but no marks of recent inflammation either on the pleura, or in the ſubſtance of the lungs, ſo that theſe adheſions were the effect of a former diſeaſe. Upon laying

open the trachea longitudinally, we found a membrane of a whitiſh colour, which formed a lining to this canal, exactly ſimilar to thoſe portions which the child threw up during life. This lay looſe at the upper part of the trachea, and was leſs firm in its texture there than at the lower part, where it adhered very cloſely, ſo that as we traced it ſome way into the ramifications, we were obliged to peel it off. Having removed this ſubſtance, there were manifeſt marks of inflammation on the ſurface of the trachea."

Case 10. "This is the caſe alluded to page 368. A girl four years old began with taking tinct. ſcillæ and vin. ipec. about half a drachm of each at a doſe, which excited vomiting, by which a good deal of viſcid phlegm was brought up, and with it ſome mucus of a whitiſh appearance, and of a thicker conſiſtence than the other, looking like coagulated lymph beginning to coagulate, which, by the kind of exertion which brought it up (for ſhe coughed with the vomiting), muſt have come from the trachea. The medicine was repeated every four, five, or ſix hours, and gently purged her. She was ſenſibly relieved after every doſe of the medicine. As the complaint gave way, we allowed longer intervals between the doſes, till at length it was given only once a day. The peculiar ſound of the cough did not go off entirely before the ſeventh or eighth day, by which time ſhe was free from diſeaſe.

Case 11. "A ſtrong luſty boy, five years old, was taken with the croup November 27, in the evening. I ſaw him at the end of forty-eight hours, his reſpiration was then very difficult, and attended with a croaking ſound, and he had quite the croupy cough. Small ſloughs were to be ſeen on the tonſils, but he ſwallowed pretty well. I vomited him with vin. ipecac. and tinct. ſcillæ; and wiſhed to repeat it every five hours.

"November 30.—His breathing very difficult, cough the ſame, pulſe frequent, ſkin moiſt, heat moderate, countenance ſhewed no marks of diſeaſe. He had only taken a ſecond doſe of the medicine, which excited no vomiting.

"December 1.—Breathing ſo exceſſively bad, that every inſpiration occaſioned a deep hollowneſs at the pit of the ſtomach, and he ſeemed as if he muſt be ſuffocated. His tongue white, but I could not examine his throat. Other appearances as before.

"2d and 3d.—Breathing ſtill very bad, but occaſionally mitigated by the phlegm which he brought up, and with which ſmall portions of film were intermixed. We could ſeldom ſee the kind or quantity of expectorated matter, for generally as ſoon as he got it into his mouth he ſwallowed it. There was ſometimes more heat than natural, and a frequent pulſe, but upon the whole, no degree of fever to excite apprehenſion. As no internal medicine could be adminiſtered, we uſed external applications. A large plaſter of gum ammoniac, diſſolved in acet. ſcillæ. was laid on the breaſt, but

neither this nor any cataplasm was suffered to lie on quietly, so as to afford any good reason to expect benefit.

"4th.—Symptoms diminishing, cough more loose, and from his manner of coughing he seemed to raise a good deal of phlegm, which he swallowed as soon as it came into his mouth.

"The complaint gradually subsided, and by the 8th his breathing was free and easy, and he had but little cough, which sounded as a common cough.

CASE 12. "December 21.—I was sent for at ten o'clock at night to see a child two years and a half old, in a family where a child a few weeks before had died of the croup. This little patient had been weakly some months ago, but of late had been in better health. I found him breathing with a stuffing; he coughed a little, and when either coughing or crying, the croupy sound was observable. The mother said that when she put him to bed early in the evening, she did not observe any symptom of this kind upon him, but after he had been in bed about two hours, according to her custom, she went to take him out of bed, and found him in this situation.—He drivelled at his mouth, and said something was in his throat. I could not examine his throat, but he swallowed some butter and sugar which was given him, with apparent ease. He had no fever."

(No. 84.) ℞. Calomel gr. iij.
Pulv. tragac. c. ʒfs.
Divide in dos. tres equales. Sumat i. 4ta quaq. hora.

Mr. Rumsey found him, next morning, free from complaint. "His mother," says he, "informed me, that he was relieved after taking the first powder, but the wheezing began to increase about the time of taking the second; after which it went off, and did not again return. The third dose however was given.—No other sensible effect was produced than a gentle purging.

CASE 13. "January 4, 1794.—I saw a lusty boy, nearly a year old, at the breast, with the croup, which came on early in the morning of the day before. The croaking sound was so great before the child had been ill thirty hours, that it might be heard at some yards distance from the house. After an emetic, we gave half a grain of calomel every two hours. The next day he was better, but had passed a restless night. Cough began to be loose. Having taken four doses of the calomel, he was gently purged. The medicine was continued, but not so frequently.

"January 6.—Passed a restless night; had several stools; slight febrile symptoms; has continued the whole time to suck, though often with difficulty. From the manner of his coughing and breathing there seemed to be a good deal of phlegm in the passages, which induced me to give an emetic, and afterwards the calomel, as before.

" 7th. He was relieved by the emetic, which he took yeſterday evening, but at night he grew worſe, and for three or four hours he breathed exceeding badly; towards morning he grew better.—Calomel continued.

" 8th.—Breathing being rather more obſtructed, we gave another emetic. From this time he continued getting better, but the croupy ſound was perceptible to the 11th, now and then. Afterwards I ſaw no more of him.—By January 9, twelve grains of calomel were taken; after which he took the ſame doſe three times a-day for two or three days."

Mr. Rumſey obſerves in a note, that the ſudden increaſe of the ſymptoms on the 7th, for four hours, had a good deal the appearance of ſpaſm, but that this was ſymptomatic.

Case 14. " January 10, 1794.—A fine child at the breaſt, thirteen months old (brother to the patient, Caſe 11.), was taken the evening before with hoarſeneſs and wheezing, which continued through the night, but in the morning he grew better. The following evening (the 10th) the ſymptoms again increaſed, and when I ſaw him the appearances of croup were unequivocal. I ordered an emetic, and afterwards a grain of calomel every four hours.

" 11th.—He had not taken any of the medicines, but after I left him he was ſick, and brought up a good deal of phlegm. In the courſe of the night the ſymptoms ſubſided, and nothing remained but a trifling hoarſeneſs.

Case 15. " A boy of a ſlender form, but healthy, was taken with ſymptoms of croup on January 16.—His general health was unaffected till the 20th, when a liſtleſſneſs and failure of appetite began to appear. At night the croupy ſound of the cough increaſed, with wheezing. I now ſaw him the firſt time. An emetic having been taken the night before, the mercurial treatment was adopted."

(No. 85.) ℞. Calomel gr. x.
Cretæ ppt. gr. xij.
M. & divide in partes equales quatuor. Sumat unam 4ta quaq. hora.

At the ſame time Mr. Rumſey ordered a drachm and a half of ſtrong mercurial ointment to be rubbed into his thighs. In the event of purging, a teaſpoonful of ſyr. pap. alb. was ordered to be given along with each powder.

" 21ſt.—After I left him at night," continues Mr. Rumſey, " his breathing became very bad, and with conſiderable ſtraining he brought up a film, by which he was relieved. He coughed but little through the night, and got ſome ſleep.—Towards evening the wheezing increaſed; cough more frequent, but looſe, attended with the croupy ſound as before; he has had but little appetite, his

pulſe is rather frequent, but is not confined to his bed. A teaſpoonful of the ſyrup was given, as he had had ſeveral ſtools.—Powders continued, and more ointment rubbed in to-night.

" 22d.—He ſlept laſt night, breathes eaſy, cough looſe, not frequent, and has leſs of the croupy ſound; countenance wan, but takes little food, and often runs about the houſe. Bowels lax. Calomel and mercurial friction continued.

" 23d.—He is much worſe, not from the croupy ſymptoms being increaſed, for theſe are diminiſhed, but ſickneſs and purging are come on, with total loſs of appetite, and great languor, weak and frequent pulſe.—Theſe ſymptoms I ſuppoſed were the effect of the mercury, he having taken upon the whole forty grains of calomel; and two or three drachms of mercurial ointment having been rubbed in, allowing for what might be waſted by the perſon's hand who applied it.—I therefore laid aſide the mercurial ointment and the calomel, gave him ſome aromatic confection, and ordered him frequently ſome cordial nutriment.

" 24th.—I found him in all reſpects better. The croupy ſymptoms were entirely gone off, he had only a little cough remaining, which had nothing peculiar in its ſound. His ſtomach and bowels were eaſy, countenance better, he was chearful, and his appetite began to return. From this time nothing more was done, and he recovered.

Case 16. " Juſt as the child whoſe caſe I have mentioned above got well, an infant in the ſame family, at the breaſt (fourteen months old), was attacked with the croup.—After an emetic, at the end of the ſecond day, a grain of calomel was given every four hours, and ſome mercurial ointment was rubbed in.—By the fifth day, the uſe of the mercury was left off, as the croupy ſymptoms had diſappeared. Upon the whole, fourteen grains of calomel were given, and nearly two drachms of the ſtrong mercurial ointment uſed in friction.

Case 17. " January 27.—I ſaw a child at the breaſt, a year old (four miles from Cheſham), ſeverely afflicted with the croup, which, I was informed, came on the day before. I propoſed an emetic, and afterwards the mercurial plan.

" 28th.—I was prevented ſeeing him to-day, being detained by a caſe of midwifery.

" 29th.—From the ſtate in which I left the child, I expected to find him either dying, or dead; but I found him much better, the difficulty of breathing ſubſided, the cough had hardly any of the croupy ſound, was looſe, and but little troubleſome. They had only given two grains of calomel, and none of the emetic.

" 30th.—No croupy ſymptoms remained, and from this time the cough ſoon wore away."

Mr. Rumſey concludes with obſerving, that he has, in this

inſtance, given a faithful hiſtory of the croup as it fell under his notice. "More extenſive experience," ſays he, "than I have yet had is requiſite to determine, whether in *mercury* we ſhall find a *certain remedy for the diſeaſe*." He candidly adds, "with regard to the above caſes it ſhould be obſerved, that ſome recovered when mercury was *not* adminiſtered, or in ſuch quantity as *not to produce any effect*; and in two patients under the care of my brother, it was given *unſucceſsfully*. Moreover the diſeaſe was leſs ſevere towards the end of the epidemic conſtitution, which was the period when we adopted this plan; ſo that admitting that all thoſe patients who recovered under ſuch treatment were *cured by mercury*, it does not follow that the ſame effects would have been produced had it been given in the early caſes; yet it ſurely merits farther trial, the ordinary mode of treatment being ſo unſucceſsful."

The ſucceeding caſes of croup appear in the Medical and Phyſical Journal. We ſhall firſt detail thoſe of Mr. Leeſon.

"G. M. eleven months old, naturally of a full habit, recently weaned, and now about his teeth; as he has generally had a cough and ſtuffing while cutting his teeth, the nurſe was not alarmed at this circumſtance, which had occurred for a day or two before I ſaw him. I was firſt called about eight o'clock in the evening; the great anxiety, difficulty of breathing, and peculiar ſound in reſpiration, clearly indicated his complaint to be the croup: his gums were lanced, an emetic mixture, compoſed of four grains of emetic tartar, one drachm of oxymel of ſquills, and an ounce and a half of water, was given in doſes of two teaſpoonsful every ten minutes until it operated; a lotion, compoſed of ſp. ætheris vitriolici compoſitus, and the aqua ammoniæ acetatæ, was applied to the throat. At nine o'clock, the ſymptoms continuing equally urgent, I had the aſſiſtance of an eminent phyſician reſident in this town; by his advice, leeches were applied to the throat, and the patient put into a warm bath; bliſters were likewiſe laid on each ſide the neck: from theſe means ſome relief appeared to be gained. At eleven o'clock, the child being more reſtleſs, was again immerſed in warm water; an oily mixture was given occaſionally. At four o'clock in the morning, the violence of the ſymptoms increaſing, an ounce of ipecacuanha wine was given, in ſmall quantities, before it produced any effect; the warm bath was again uſed; about ſeven o'clock the child expired.

"April 20. J. L. aged twenty-two months, yet ſtill at the breaſt, has had a ſlight cough for a few days; it has increaſed much during the night; the child has been very reſtleſs, and ſweats much about the face and head; ſwallows with tolerable eaſe; breathes with much anxiety, and with a peculiar thrill ſound. It was nine o'clock in the morning when I firſt ſaw this

child; being aware, from the fatal termination of the former case, of the neceſſity of powerful means to arreſt the progreſs of the diſorder, I immediately opened the jugular veins, and obtained from thence between ſix and ſeven ounces of blood; after which a ſolution of ſix grains of emetic tartar, in an ounce and a half of water, with a drachm of oxymel of ſquills, was given in doſes of two teaſpoonsful every ten minutes; the whole mixture was given before any vomiting was produced: the child was then placed in the warm bath for ſeven minutes. For a ſhort time it appeared to be more compoſed, and to breathe with leſs difficulty; but, about twelve o'clock, the former ſymptoms returned. A teaſpoonful of the decoction of ſeneka root was then given every half-hour, which excited great thirſt, and additional reſtleſſneſs; the patient grew worſe, breathed with more and more difficulty, and expired about three o'clock, P. M.

"It has generally been obſerved, that the croup is moſt prevalent during a wet ſeaſon, or in damp ſituations; theſe two caſes occurred when the weather was more than uſually dry.

"It will be obſerved in the above caſes, that there was conſiderable diminution of the ſenſibility of the ſtomach; as appears from the quantity of emetic medicine neceſſary to produce vomiting. May not this ariſe from an increaſed determination of blood to the trachea, diminiſhing the influx in the veſſels of the ſtomach?"

Mr. Cuſtance, of Kidderminſter, addreſſing the editors, ſays, "Permit me to embrace this opportunity of tranſmitting to you two caſes of *croup* ſucceſsfully treated with the digitalis, which, I think, promiſes to be a very efficacious remedy in that dreadful and generally fatal diſorder. I ſhould have waited to ſee its effects in a greater number of caſes, before I had ſent you the reſult, but am deſirous of throwing out the hint to practitioners in general as early as poſſible, and ſhall be happy to ſee it has been improved upon, with the deſired ſucceſs, in their future treatment of the croup.

"Mary Bell, four years of age, was brought to me about twenty-four hours after being attacked with the uſual ſymptoms of croup. The hoarſeneſs, ſhrill voice, and dyſpnœa, were very conſiderable. I ordered five drops of tinct. digitalis to be given her in water every four hours; and the next day ſhe was quite free from the complaint, which never returned.

"Mary Millard, a year and half old, was attacked on the 11th of this month with hoarſeneſs, a barking cough, and great dyſpnœa. I ſaw her about twenty hours after the firſt appearance of theſe ſymptoms, and found her extremely reſtleſs, with a very quick pulſe. I ordered five drops of the tinct. digitalis every four hours. 12th, Symptoms relieved; pulſe ſtill quick; has had one

ſtool. Increaſed the doſe to ſix drops:—at night p. leſs frequent; three ſtools; hoarſeneſs and barking almoſt gone. 13th, Still ſome barking, but coughs leſs frequently:—8 o'clock at night, very reſtleſs; hoarſeneſs and dyſpnœa increaſed; p. very quick. Cont. tinctura. 14th, Slept well; frequent ſtools; dyſpnœa and hoarſeneſs much relieved. Adde tinct. opii gt. ij. ſing. dos. digitalis: eight o'clock at night, five ſtools ſince morning; p. much leſs frequent; dyſpnœa and hoarſeneſs ſtill better. 15th, A good night; two ſtools; pulſe calm; dyſpnœa quite gone; ſome hoarſeneſs remains. 16th, Symptoms of the croup quite gone. 21ſt, Continues free from complaint."

The ſame writer, in a ſubſequent paper, calls the attention of the profeſſion to the power which the digitalis apparently poſſeſſes of arreſting the dangerous ſymptoms of that dreadful diſorder.

"It doubtleſs has occurred to many gentlemen," ſays he, "as it did to me, to make trial of it, upon the principle of its operating ſo quickly and powerfully upon the arterial ſyſtem, and thereby ſtopping the rapid progreſs of the inflammatory ſymptoms. Conſidering the common fatality of the croup, and the little command we have over it by the remedies hitherto uſually employed, I cannot but wiſh that the following additional caſe of croup I now ſend you, may be a means of promoting a trial of the digitalis. So much has been written by ingenious men on the ſubject of croup, that it is quite needleſs for me to enter particularly into it. The definition of it given by Dr. Cullen in his Synopſis, is ſo truly characteriſtic, that it is ſcarcely poſſible for any perſon to miſtake the diſorder: the "vox rauca" and "tuſſis clangoſa," will infallibly determine the real exiſtence of croup.

"September 17, 1800, Elizabeth Clark, two years of age, was *ſuddenly* ſeized laſt night, at eight o'clock, with hoarſeneſs and difficulty of breathing; both which ſymptoms are greatly increaſed this morning. She coughs with a barking noiſe; pulſe very quick; belly natural.

"Sumat Tincturæ Digitalis (ſecundum Dr. Maclean), gt. vj. 4tâ, quâque horâ.

"18th. Has taken five doſes of the drops; pulſe not too frequent; dyſpnœa and cough *entirely* gone. Sumat guttas omni 6tâ horâ.

"19th. Took the drops regularly every ſix hours; had a ſlight return of dyſpnœa and cough laſt night, which continued about an hour; ſlept well afterwards, and is this morning apparently well."

When viſited on the 21ſt, the patient continued free from complaint.

That the *cynanche trachealis* ſometimes occurs in *adult* ſubjects, was fatally evinced in the caſe of that truly great and heroic character General Waſhington. The obſervations on the medical treat-

ment employed in that case, by Dr. John Reid, physician to the Finsbury Dispensary, in London, contain many useful strictures, for which reason we annex them to the present article.

"In reading the official report," says Dr. Reid, "of the death of General Washington, as stated in the newspapers, &c. I should imagine, there were few medical persons who did not feel astonishment at the very extraordinary manner in which that great man was treated by his physicians, during his last and fatal indisposition.

"Some time in the night of the 13th of December (1800), it is said, that the general was seized by a disease, called the cynanche trachealis.

"During the same night he sent for a bleeder, who took from him twelve or fourteen ounces of blood.

"The next morning a physician was sent for, who arrived at Mount Vernon at eleven o'clock; when, imagining danger in the case, he advised the calling in of two consulting physicians.

"In the interval, however, he thought proper to employ, in spite of the twelve or fourteen ounces that had already been expended, two copious bleedings. Now, when we consider that these are called copious, and the other is not noticed as such, and also in the difference with which a future most copious bleeding is afterwards mentioned, we may presume, that each of these was twenty-five, or twenty ounces at least.

"After this, 'two moderate doses of calomel were administered.' I know not exactly what a moderate American dose of calomel may be, but if, as it is fair to presume, it be in proportion to the bleedings, we may conclude, that it was at least very considerable.

"Upon the arrival of the first of the consulting physicians, it was agreed, that as there were no signs of accumulation in the bronchial vessels of the lungs, they should try another bleeding.

"Now this appears to be perfect inexplicable.

"As there were at present no signs of accumulation in the bronchial vessels of the lungs, they were driven to another bleeding. Hence, it would seem, that this last bleeding was to *produce* an accumulation in the bronchial vessels of the lungs. There was great difficulty of breathing, great inflammation; but as there was, as yet, no accumulation in the lungs, they were determined to induce that also; and, as a likely mean of inducing it, had recourse to a most extravagant effusion of blood. This is not an unfair interpretation of their words; but it could not have been their real meaning: their real meaning it is impossible to discover. In addition to all the previous venesections, thirty-two ounces are now drawn! The medical reader will not be surprised to find that this was unattended by any apparent alleviation of the disease.

"In the next place, vapours of vinegar and water are frequently inhaled. Two doſes of calomel were already given; but this is not deemed ſufficient, ten grains of calomel are added: nor is even this ſufficient; repeated doſes of emetic tartar, amounting, in all, to five or ſix grains, are next adminiſtered. It is ſaid, 'the powers of life now ſeemed to yield to the force of the diſorder.' To many it may appear, that the yielding of the vital principle, in theſe circumſtances, was not *altogether* owing to the force of the diſorder.

"The patient, lying in this feeble and nearly exhauſted ſtate, is to be ſtill farther tormented. Bliſters are next applied to his extremities, together with a cataplaſm of bran and vinegar to his throat.

"It is obſerved, that 'ſpeaking, which was painful from the beginning, now became ſcarcely practicable.' When we reflect upon that extreme degree of weakneſs to which the patient muſt, by this time, have been reduced, and that he had both a bliſter and a cataplaſm of bran and vinegar at his throat, can we wonder that ſpeaking would be ſcarcely practicable? Reſpiration grew more and more contracted and imperfect, until after eleven o'clock on the Sunday night, when he expired without a ſtruggle.

"Think of a man being, within the brief ſpace of little more than twelve hours, deprived of eighty, or perhaps ninety, ounces of blood; afterwards ſwallowing two moderate American doſes of calomel, which were accompanied by an injection; then five grains of calomel, and five or ſix grains of emetic tartar; vapours of vinegar and water frequently inhaled; bliſters applied to his extremities; a cataplaſm of bran and vinegar to his throat, upon which a bliſter had been already fixed: is it ſurpriſing that, when thus treated, the afflicted general, after various ineffectual ſtruggles for utterance, at length articulated a deſire that he might be allowed to die without interruption!

"To have reſiſted the fatal operation of ſuch Herculean remedies, one ſhould imagine that this venerable old man ought at leaſt to have retained the vigor of his earlieſt youth.

"A Britiſh phyſician may be deemed not competent to aſcertain the propriety of tranſatlantic practice; the current of blood, in the inhabitants of the new world, may bear ſome proportion to the current of its rivers; in that caſe, the medical treatment ought likewiſe to be conducted upon a larger ſcale.

"But this is a ſubject not proper for levity; it is a ſerious and ſolemn ſubject; and it is on that account that I have been induced to make the few preceding obſervations."

We leave the reader to make his own remarks on theſe objections. Dr. Reid's opinion of large bleedings in this diſeaſe will be found to agree with the ſentiments of ſome other practitioners whoſe ideas have been noticed in the foregoing pages.

Sp. IV. Cynanche pharyngea.

Cynanche pharyngea. *Sauv.* ſp. 6. *Eller* de cogn. et cur. ſect. 7.
Anginæ inflammatoriæ, ſp. 4. *Boerh.* 804.

This is not materially different from the cynanche tonſillaris; only that the inflammation is ſaid to begin in the pharynx, though Dr. Cullen ſays he never knew an inſtance of it. The ſymptoms are almoſt the ſame, and the cure is preciſely ſo with that of the cynanche tonſillaris.

Sp. V. Cynanche parotidæa.

Cynanche parotidæa, *Sauv.* ſp. 14. *Gallis* Oreillons et Ourles, *Tiſſot* avis au peuple, No. 116. *Encyclopédie*, au mot *Oreillons.*
Angina externa, *Anglis* the Mumps, *Ruſſel* œcon. natur. p. 114. *Scotis* the Branks.
Catarrhus Bellinſulanus, *Sauv.* ſp. 4.
Oſſervazioni di *Girol Gaſpari*, Venez. 1731.
Oſſervazioni di *Targ. Tozetti*, Racolta prima, p. 176.

This is a diſeaſe well known to the vulgar, but little taken notice of by medical writers. It is often epidemic, and manifeſtly contagious. It comes on with the uſual ſymptoms of pyrexia, which are ſoon after attended with a conſiderable tumor of the external fauces and neck. The ſwelling appears firſt as a glandular moveable tumor at the corner of the lower jaw; but it ſoon becomes uniformly diffuſed over a great part of the neck, ſometimes on one ſide only, but more commonly on both. The ſwelling continues to increaſe till the fourth day; but from that period it declines, and in a very few days more, goes off entirely. As the ſwelling of the fauces recedes, it not unfrequently happens that ſome tumor affects the teſticles in the male ſex, or the breaſts in the female. Theſe tumors are ſometimes large, hard, and ſomewhat painful; but are ſeldom either very urgent or of long continuance. The pyrexia attending this diſeaſe is commonly ſlight, and goes off with the ſwelling of the fauces; but ſometimes when the ſwelling of the teſticles does not ſucceed to that of the fauces, or when the one or the other has been ſuddenly repreſſed, the pyrexia becomes more conſiderable, is often attended with delirium, and has ſometimes proved fatal.

As this diſeaſe commonly runs its courſe without either dangerous or troubleſome ſymptoms, ſo it hardly requires any reme-

dies. An antiphlogiſtic regimen, and avoiding cold, are all that will be commonly neceſſary. But when, upon the receding of the ſwellings, the pyrexia comes to be conſiderable, and threatens an affection of the brain, it will be proper, by warm fomentations, to bring back the ſwelling; and by the vomits (No. 1.) or (No. 2.), bleeding, or bliſtering, to obviate the conſequences of its abſence.

As a fomentation the late Dr. Morris uſed the following:

(No. 86.) ℞ Fomenti communis lib. ij.
Ammonii muriati unc. j.
Spiritus camphorati unc. ij.

Whilſt the fomentation is hot, the muriated ammonia is to be diſſolved in it, and the camphorated ſpirit added at the inſtant of its being employed.

Rubbing the ſwelled parts with the liniment (No. 61.) will alſo promote this effect. Or the following from the Pharmacopœia of St. Thomas's Hoſpital.

(No. 87.) ℞ Olei olivæ ℥iſs.
Ceræ flavæ inciſæ ʒij.
Liquefactis ſimul admiſce.
Aquæ ammoniæ ℥iſs. Miſce fiat linimentum.

In common caſes, the febrile ſymptoms may be reſiſted by:

(No. 88.) ℞ Nitri pur. gr. x.
Antim. tartar, gr. ½ ad ¾. Fiat pulvis ter die ſumend.

Coſtiveneſs may be obviated by (No. 3.) or by the *Enema* ſalinum of St. George's Hoſpital.

(No. 89.) ℞ Aquæ tepidæ lib. j.
Salis marini unc. j.
Fiat enema.

Genus XI. PNEUMONIA.

Febris pneumonica, *Hoffm.* II. 136.

Sp. I. Peripneumonia.

Peripneumony, or Inflammation of the Lungs.

Peripneumonia, *Sauv.* gen. 112. *Lin.* 34. *Vog.* 51. *Sag.* gen. 311. *Boerh.* 820. *Juncker* 67.

Peripneumonia pura ſive vera Auctorum, *Sauv.* ſp. 1.

Peripneumonia gaſtrica, *Sauv.* ſp. 11. *Morgagn.* de cauſ. et ſed. morborum Epiſt. xx. art. 30, 31.

Peripneumonia catarrhalis, *Sauv.* ſp. 6.

Peripneumonia notha, *Sydenh.* ſect. 6. cap. 4. *Boerh.* 867. *Morgagni* de cauſ. et ſed. Epiſt. xxi. 11.—15.

Peripneumonia putrida, *Sauv.* ſp. 2.
Peripneumonia ardens, *Sauv.* ſp. 3.
Peripneumonia maligna, *Sauv.* ſp. 4.
Peripneumonia typhodes, *Sauv.* ſp. 5.
Amphimerina peripneumonica, Sauv. ſp. 15.

Sp. II. Pleuritis.

The *Pleuriſy*, or Inflammation of the Pleura.

Pleuritis, *Sauv.* gen. 103. *Lin.* 27. *Vog.* 56. *Sag.* gen. 303. *Boerh.* 87. *Junck.* 67.
Paraphreneſis, *Sauv.* gen. 102. *Lin.* 26.
Paraphrenitis, *Vog.* 55. *Boerh.* 907.
Diaphragmitis, *Sag.* gen. 304.
Pleuritis vera, *Sauv.* ſp. 1. *Boerh.* 875. *Verna* princeps morb. acut. pleuritis, l. 1. cap. 2, 3. *Zeviani* della parapleuritide, cap. 3. *Morgagni* de ſed. et cauſ. morb. Epiſt. xx. art. 56. xxi. 45. *Wendt* de pleuritide, apud *Sandifort*, theſ. ii.
Pleuritis pulmonis, *Sauv.* ſp. 2. *Zevian.* dell. parapleur. iii. 28, &c.
Pleuropneumonia, pleuro-peripneumonia, peripneumo-pleuritis Auctorum. *Baronius* de pleuri-pneumonia. Ill. *Halleri* opuſcul. patholog. obſ. 13. *Morgagni* de ſed, et cauſ. Epiſt. xx. et xxi. paſſim. *Cleghorn*, Minorca, p. 247. *Triller* de pleuritide, aph. 1, 2, 3. cap. i. 8. *Huxham*, Diſſert. on pleuriſies, &c. chap. i. Ill. *Pringle*, Diſ. of the army.
Pleuritis convulſiva, *Sauv.* ſp. 13. *Bianch.* hiſt. hep. vol. i. p. 234.
Pleuritis hydrothoracica, *Sauv.* ſp. 15. *Morgagni* de cauſ. et ſed. xx. 34.
Pleuritis dorſalis, *Sauv.* ſp. 3. *Verna*, p. 3. cap. 8.
Pleuritis mediaſtini, *Sauv.* ſp. 3. *P. Sal. Div.* de affec. part. cap. 6. *Friend*, Hiſt. Med. de Avenzoare.
Mediaſtina, *Vog.* 52.
Pleuritis pericardii, *Sauv.* ſp. 5. *Verna*, p. iii. cap. 9.
Parapleuritis, *Zeviani* della parapleuritide.
Pleurodyne parapleuritis, *Sauv.* ſp. 19.
Paraphreneſis diaphragmatica, *Sauv.* ſp. 1. *De Haen*, Rat. med. i. 7. iii. p. 31.
Paraphreneſis pleuritica, *Sauv.* ſp. 2.
Paraphreneſis hepatica, *Sauv.* ſp. 3.

Under the general head of *Pneumonia*, Dr. Cullen comprehends all inflammations of the thoracic viſcera, or membrane lining the inſide of that cavity; as the ſymptoms do not ſufficiently diſtin-

guiſh the ſeat of the affection, nor does a difference in the ſituation of the affected place make any difference in the cure.

1. *Deſcription.*] Pneumonic inflammation, however various in the ſeat, always diſcovers itſelf by pyrexia, difficult breathing, cough, and pain in the ſame part of the thorax. It almoſt always comes on with a cold ſtage, and is accompanied with the other ſymptoms of pyrexia; though in ſome few inſtances the pulſe may not be more frequent, nor the heat of the body increaſed beyond what is natural. Sometimes the pyrexia is from the beginning accompanied with the other ſymptoms; but frequently it is formed ſome hours before them, and particularly before the pain be felt. The pulſe, for the moſt part, is frequent, full, ſtrong, hard, and quick; but, in a few inſtances, eſpecially in the advanced ſtate of the diſeaſe, it is weak, ſoft, and at the ſame time irregular. The difficulty of breathing is moſt conſiderable in inſpiration, both becauſe the lungs do not eaſily admit of a full dilatation, and becauſe the dilatation increaſes the pain attending the diſeaſe. The difficulty of breathing is alſo greater when the patient is in one poſture of the body rather than another. It is generally greater when he lies on the ſide affected; though ſometimes the contrary happens. Very often the patient cannot lie eaſy upon either ſide, and can find eaſe only when lying on the back; and ſometimes he cannot breathe eaſily, except when in ſomewhat of an erect poſture. The cough, in different caſes, is more or leſs urgent or painful. It is ſometimes dry, or without any expectoration, eſpecially in the beginning of the diſeaſe; but more commonly it is, even from the beginning, moiſt, and the matter ſpit up various, both in conſiſtence and colour, and frequently it is ſtreaked with blood. The pain is alſo different in different caſes, and felt in different parts of the thorax, but moſt frequently in one ſide. It has been ſaid to affect the right ſide more frequently than the left; but this is uncertain, and we are ſure that the left ſide has been very often affected. Sometimes it is felt as if it was under the ſternum; ſometimes in the back between the ſhoulders; and when in the ſides, its place has been higher or lower, more forward or backward; but the place of all moſt frequently affected is about the ſixth or ſeventh rib, near the middle of its length, or a little more forward. The pain is often ſevere and pungent; but ſometimes more dull and obtuſe, with a ſenſe of weight rather than of pain. It is moſt eſpecially ſevere and pungent when occupying the place laſt mentioned. For the moſt part it continues fixed in one part, but ſometimes ſhoots from the ſide to the ſcapula on one hand, or to the ſternum and clavicle on the other.

Dr. Cullen ſuppoſes that the diſeaſe is always ſeated, or at leaſt begins, in ſome part of the pleura, taking that membrane in its greateſt extent, as now commonly underſtood; that is, as cover-

ing not only the internal surface of the cavity of the thorax, but also as forming the mediastinum, and as extended over the pericardium, and over the whole surface of the lungs. But as the symptoms never clearly indicate where the seat of the disease is, there is but little foundation for the different names by which it has been distinguished. The term *pleurisy* is improperly limited to that inflammation which begins in and chiefly affects the pleura costalis. This our author thinks is a rare occurrence; and that the pneumonia much more frequently begins in the pleura investing the lungs, producing all the symptoms which belong to what hath been called the *pleuritis vera*. The word *peripneumony* has been applied to an inflammation beginning in the parenchyma, or cellular texture of the lungs, and having its seat chiefly there. But to Dr. Cullen it seems very doubtful if any acute inflammation of the lungs, or any disease which has been called *peripneumony*, be of that kind. It seems probable, that every acute inflammation begins in membranous parts; and in every dissection of persons who have died of peripneumony, the external membrane of the lungs, or some part of the pleura, has appeared to have been considerably affected. An inflammation of the pleura covering the upper surface of the diaphragm, has been distinguished by the appellation of *paraphrenitis*, as supposed to be attended with the peculiar symptoms of delirium, *risus sardonicus*, and other convulsive motions: but it is certain, that an inflammation of that portion of the pleura, and affecting also even the muscular substance of the diaphragm, has often taken place without any of the symptoms above mentioned; and neither the dissections, which have fallen under Dr. Cullen's observations, nor any accounts of dissections, support the opinion that an inflammation of the pleura, covering the diaphragm, is attended with delirium more commonly than any other pneumonic inflammation.—It is to be observed, however, that though the inflammation may begin in one particular part of the pleura, the morbid affection is commonly communicated to the whole extent of the membrane.

The pneumonic inflammation, like others, may terminate by resolution, suppuration, or gangrene: but it has also a termination peculiar to itself; namely, when it is attended with an effusion of blood into the cellular texture of the lungs, which, soon interrupting the circulation of the blood through the viscus, produces a fatal suffocation. This, indeed, appears to be the most common termination of pneumonic inflammation when it ends fatally; for upon the dissection of almost every person who has died of this disease, it appears that such an effusion had happened. From the same dissections we learn, that pneumonic inflammation commonly produces an exudation from the internal surface of the pleura, which appears partly as a soft viscid crust, often of a compact membranous form, covering every-where the surface of the

pleura, and particularly thoſe parts where the lungs adhere to the pleura coſtalis, or mediaſtinum; and this cruſt ſeems always to be the cement of ſuch adheſion. The ſame exudation ſhows itſelf alſo by a quantity of ſerous fluid commonly found in the cavity of the thorax; and ſome exudation or effuſion is uſually found to have been made into the cavity of the pericardium. It ſeems likewiſe probable, that an effuſion of this kind is ſometimes made into the cavity of the bronchiæ; for in ſome perſons who have died, after labouring under a pneumonic inflammation for a few days only, the bronchiæ have been found filled with a conſiderable quantity of ſerous and thickiſh fluid, which muſt be conſidered rather as the effuſion above mentioned, having had its thinner parts taken off by reſpiration, than as a pus ſo ſuddenly formed in the inflamed part. It is, however, not improbable, that this effuſion, as well as that made into the cavities of the thorax and pericardium, may be a matter of the ſame kind with that which in other inflammations is poured into the cellular texture of the parts inflamed, and there converted into pus; but in the thorax and pericardium it does not always put on this appearance, becauſe the cruſt covering the ſurface prevents the abſorption of the thinner part. This abſorption, however, may be compenſated in the bronchiæ, by the drying power of the air; and therefore the effuſion into them may aſſume a more purulent appearance. In many caſes of pneumonic inflammation, when the expectoration is very copious, it is difficult to ſuppoſe that the whole proceeds from the mucous follicles of the bronchiæ; and it ſeems probable that a great part of it may come from the effuſed ſerous fluid juſt mentioned; and this too will account for the appearance of the expectoration being ſo often purulent. Perhaps the ſame thing will account for that purulent matter found in the bronchiæ, which De Haen ſays he had often obſerved when there was no ulceration in the lungs, and which he accounts for in a very ſtrange manner, namely, by ſuppoſing a pus formed in the circulating blood.

Dr. Cullen is of opinion, that the effuſion into the bronchiæ above mentioned, often concurs with the effuſion of red blood into the cellular ſubſtance of the lungs to occaſion the fatal ſuffocation which frequently terminates peripneumony: that the effuſion of ſerum alone may have this effect: and that the ſerum poured out in a certain quantity, rather than any debility in the powers of expectoration, is the cauſe of that ceſſation of ſpitting which precedes the fatal event; for in many caſes the expectoration has ceaſed, when no other ſymptoms of debility have appeared, and when, upon diſſection, the bronchiæ have been full of liquid matter. Nay, it is even probable, that in ſome caſes ſuch an effuſion may take place without any ſymptoms of violent inflammation; and in other caſes the effuſion taking place may ſeem

to remove the ſymptoms of inflammation which had appeared before, and thus account for thoſe unexpected fatal terminations which have ſometimes happened.

Pneumonic inflammation ſeldom terminates by reſolution, without being attended with ſome evident evacuation. An hæmorrhagy from the noſe happening on ſome of the firſt days of the diſeaſe has ſometimes put an end to it; and it is ſaid, that an evacuation from the hæmorrhoidal veins, a bilious evacuation by ſtool, and an evacuation of urine with a copious ſediment, have ſeverally had the ſame effect: but ſuch occurrences have been rare. The evacuation moſt frequently attending, and ſeeming to have the greateſt effect in promoting reſolution, is an expectoration of a thick, white, or yellowiſh matter, a little ſtreaked with blood, copious, and brought up without much or violent coughing. Very frequently the reſolution of this diſeaſe is attended with, and perhaps produced by, a ſweat, which is warm, fluid, copious, over the whole body, and attended with an abatement of the frequency of the pulſe, heat of the body, and other febrile ſymptoms. Although, from the hiſtory now given, it appears that pleuriſy and peripneumony cannot with propriety be conſidered as different diſeaſes, yet it is certain that in different caſes this affection occurs with an aſſemblage of ſymptoms ſeparate and diſtinct. Thus even Dr. Cullen himſelf, in his Noſology, has defined pleuritis to conſiſt in pyrexia, attended with pungent pain of the ſide, painful reſpiration, difficulty of lying down, particularly on the affected ſide, and diſtreſſing cough, in the beginning dry, but afterwards humid, and often with bloody expectoration. While again he has defined peripneumony to conſiſt in pyrexia attended with a dull pain under the ſternum and between the ſhoulders, anxiety, difficulty of breathing, humid cough, expectoration generally bloody, a ſoft pulſe, and a tumid livid appearance of the countenance. It is highly probable, that the firſt of theſe ſets of ſymptoms chiefly ariſes from a ſtate of active inflammation, and the ſecond from effuſion. Thus, in certain caſes, the ſymptoms may appear perfectly ſeparate and diſtinct; but more frequently both inflammation and effuſion are united; and thus the ſymptoms in both definitions are in general combined in the ſame patient.

2. *Cauſes of, and perſons ſubject to, this diſorder.*] The remote cauſe of pneumonic inflammation is commonly cold applied to the body, obſtructing perſpiration, and determining to the lungs, while at the ſame time the lungs themſelves are expoſed to the action of cold. Theſe circumſtances operate chiefly when an inflammatory diatheſis prevails in the ſyſtem; and therefore thoſe principally affected with this diſeaſe are perſons of the greateſt vigour, in cold climates, in the winter ſeaſon, and particularly in the ſpring, when viciſſitudes of heat and cold are frequent. This diſeaſe, however, may ariſe in any ſeaſon when ſuch varie-

ties take place. Other remote causes also may have a share in producing this disorder; such as every means of obstructing, straining, or otherwise injuring the pneumonic organs. The pneumonic inflammation has sometimes been so much an epidemic, that it hath been suspected of depending on a specific contagion; but Dr. Cullen never met with an instance of its being contagious.

3. *Prognosis.*] In pneumonic inflammation, a violent pyrexia is always dangerous. The danger, however, is chiefly denoted by the difficulty of breathing. When the patient can lie on one side only; when he can lie on neither side, but only on his back; when he cannot breathe with tolerable ease, except when the trunk of his body is erect; when even in this posture the breathing is very difficult, and attended with a turgescence and flushing of the face, with partial sweats about the head and neck, and an irregular pulse; these circumstances mark the difficulty of breathing in different degrees; and consequently, in proportion, the danger of the disease. A frequent violent cough, aggravating the pain, is always the symptom of an obstinate disease; and as the disease is seldom or never resolved without some expectoration, so a dry cough must always be an unfavourable symptom.

The proper characteristics of the expectoration have been already laid down; and though an expectoration which has not these marks must indicate a doubtful state of the disease, yet the colour alone can give no certain prognostic. An acute pain, very much interrupting inspiration, is always the mark of a violent disease; but not of a more dangerous disease than an obtuse pain attended with very difficult respiration.

When the pains, which had at first affected one side only, shall afterwards spread into the other; or when, leaving the side first affected, they pass entirely into the other; these are always marks of a dangerous disease. A delirium coming on during a pneumonic inflammation is always a symptom denoting much danger.

When pneumonic disorders terminate fatally, it is on one or other of the days of the first week, from the third to the seventh. This is the most common case; but, in a few instances, death has happened at a later period. When the disease is violent, but admitting of resolution, this also happens frequently in the course of the first week; but in a more moderate disease the resolution is often put off to the second week. The disease generally suffers a remission on some of the days from the third to the seventh: which, however, may be often fallacious, as the disease sometimes returns again with as much violence as before; and in such a case with great danger. Sometimes it disappears on the third day, while an erysipelas makes its appearance on some external part; and if this continue fixed, the pneumonic inflammation

does not recur. If the diſeaſe continue beyond the fourteenth day, it will terminate in a ſuppuration, or PHTHISIS. The termination by gangrene is much more rare than has been imagined; and when it does occur, it is uſually joined with the termination by effuſion; the ſymptoms of the one being hardly diſtinguiſhable from thoſe of the other.

4. *Cure.*] This muſt proceed upon the general plan mentioned under SYNOCHA; but, on account of the importance of the part affected, the remedies muſt be employed early, and as fully as poſſible: and theſe are chiefly directed with one of three views, viz. for obtaining a reſolution of the inflammation in the thorax, for mitigating the urgent ſymptoms before a reſolution can be effected, and for counteracting or obviating the conſequences of the diſeaſe. Veneſection is the remedy chiefly to be depended on; and the quantity taken away ought in general to be as large as the patient's ſtrength will allow. The remiſſion of pain, and the relief of reſpiration, during the flowing of the blood, may limit the quantity to be then drawn; but if theſe ſymptoms of relief do not appear, the bleeding ſhould be continued to a conſiderable extent, unleſs ſymptoms of a beginning ſyncope come on. It is ſeldom that one bleeding, however large, will cure this diſeaſe; and though the pain and difficulty of breathing may be much relieved by the firſt bleeding, theſe ſymptoms commonly, and after no long interval, recur, often with as much violence as before. In this caſe the bleeding is to be repeated, even on the ſame day, and perhaps to the ſame quantity as before. Sometimes the ſecond bleeding may be larger than the firſt. There are perſons who, by their conſtitution, are ready to faint even upon a ſmall bleeding; and in ſuch perſons this may prevent the drawing ſo much blood at firſt as a pneumonic inflammation may require; but as the ſame perſons are found to bear after bleedings better than the firſt, this allows the ſecond and ſubſequent bleedings to be larger, and to ſuch a quantity as the ſymptoms of the diſeaſe may ſeem to require.

Bleedings are to be repeated according to the ſtate of the ſymptoms, and they will be more effectual when practiſed in the courſe of the firſt three days than afterwards; but they are not to be omitted though four days of the diſeaſe may already have elapſed. If the phyſician has not been called in time, or the firſt bleedings have not been ſufficiently large, or even though they ſhould have procured ſome remiſſion, yet upon the return of the urgent ſymptoms, bleeding may be repeated at any time within the firſt fortnight, or even after that period, if a ſuppuration be not evident, or if after a ſeeming ſolution the diſeaſe ſhall have returned.

With reſpect to the quantity of blood which may be taken away with ſafety, no general rules can be given; as it muſt be very different according to the ſtate of the diſeaſe, and the conſtitution

of the patient. In an adult male of tolerable ſtrength, a pound avoirdupois of blood is a full bleeding. Any quantity above twenty ounces is a large, and any quantity below twelve is a ſmall, bleeding. An evacuation of four or five pounds, in the courſe of two or three days, is generally as much as moſt patients will bear; but if the intervals between the bleedings, and the whole of the time during which the bleedings have been employed, have been long, the quantity taken upon the whole may be greater.

When a large quantity of blood hath been taken from the arm, and it is doubtful if more can be taken in that manner with ſafety, ſome blood may ſtill be taken by cupping and ſcarifying. This will eſpecially be proper, when the recurrence of the pain, rather than the difficulty of breathing, becomes the urgent ſymptom; and then the cupping and ſcarification ſhould be made as near as poſſible to the pained part.

An expectoration ſometimes takes place very early in the diſeaſe; but if the ſymptoms continue urgent, the bleedings muſt be repeated notwithſtanding the expectoration: but in a more advanced ſtate, and when the ſymptoms have ſuffered a conſiderable remiſſion, we may then truſt the cure to the expectoration alone. It is not obſerved that bleeding, during the firſt days of the diſeaſe, ſtops expectoration; on the contrary, it hath been often found to promote it; and it is only in a more advanced ſtate of the diſeaſe, when the patient has been already exhauſted by large evacuations and a continuance of his illneſs, that bleeding ſeems to put a ſtop to expectoration; and even then, this ſtoppage ſeems not to take place ſo much from the powers of expectoration being weakened by bleeding, as by its favouring the ſerous effuſion in the bronchiæ, already taken notice of.

Beſides the bleeding, every part of the antiphlogiſtic regimen ought here to be carefully employed: the patient muſt keep out of bed as much as he can bear; muſt have plenty of warm diluting drinks, impregnated with vegetable acids, accompanied with nitre or ſome other cooling neutral ſalt; and the belly alſo ought to be kept open by emollient clyſters or cooling laxative medicines. Vomiting in the beginning is dangerous; but in a ſomewhat advanced ſtate of the diſeaſe emetics have been found the beſt means of promoting expectoration. Fomentations and poultices to the pained part have been found uſeful; but bliſtering is found to be much more effectual. A bliſter, however, ought not to be applied till at leaſt one bleeding hath been premiſed, as veneſection is leſs effectual when the irritation of a bliſter is preſent. If the diſeaſe be moderate, a bliſter may be applied immediately after the firſt bleeding; but in violent caſes, where it may be preſumed that a ſecond bleeding may ſoon be neceſſary after the firſt, it will be proper to delay the bliſter till after the ſecond bleeding, when it may be ſuppoſed that the irritation occaſioned by the

bliſter will be over before another bleeding becomes neceſſary. It may frequently be of uſe in this diſeaſe to repeat the bliſtering; and in that caſe the plaſters ſhould always be applied ſomewhere on the thorax, for when applied to more diſtant parts they have little effect. The keeping the bliſtered parts open, and making what is called a *perpetual bliſter*, has much leſs effect than a repeated bliſtering.

Many methods have been propoſed for promoting expectoration, but none appear to be ſufficiently effectual; and ſome of them, being acrid ſtimulant ſubſtances, are not very ſafe. The gums uſually employed ſeem to be too heating; the ſquills leſs ſo; but they are not very powerful, and ſometimes inconvenient, by the conſtant nauſea they occaſion. The volatile alkali may be of ſervice as an expectorant, but it ought to be reſerved for an advanced ſtate of the diſeaſe. Mucilaginous and oily demulcents appear to be uſeful, by allaying that acrimony of the mucus which occaſions too frequent coughing; and which coughing prevents the ſtagnation and thickening of the mucus, and thereby its becoming mild. The receiving into the lungs the ſteams of warm water, impregnated with vinegar, has often proved uſeful in promoting expectoration; and, for this purpoſe, the machine called the *inhaler*, invented by Dr. Mudge of Plymouth, may be of great ſervice. But of all others, the antimonial emetics, given in nauſeating diſeaſes, promiſe to be the moſt powerful for promoting expectoration. The kermes mineral hath been greatly recommended; but doth not ſeem to be more efficacious than emetic tartar or antimonial wine; and the doſe of the kermes is much more uncertain than that of the others.

Dr. Fordyce, after directing the uſe of the lancet, makes the following remarks on the cure of peripneumony.

Purging with ſtrong purgatives is improper in inflammations of the thoracic viſcera of the phlegmonous kind, but the body is to be kept open by laxatives.

After bleeding from the ſkin of the breaſt, we ſhould produce a free circulation in the other parts by (No. 25.) or the following:

(No. 90.) ℞ Aq. menthæ ſativæ ʒiſs.
Sal. nitr. ℈j. ad ℈ij. vel Sal. Alk. V. Fix. Succ. Limon. ſatur. ℈j. vel Aq. ammon. acet. ʒß.
Syrup. Limon. ʒij. M. Ft. Hauſt. quartâ vel ſextâ quâque horâ ſumend.

Inflaming another part is of ſervice, by rubbing the following on the ſide:

(No. 91.) ℞ Olei olivæ ʒj.
Aquæ ammoniæ puræ ʒij. ad ʒj.
Camphoræ gr. xxx. Miſce fiat Linimentum.

Where bliſtering is deſirable, the following formula of Dr. Nankivel may be ſubſtituted:

(No. 92.) ℞ Linim. ſaponis comp. ℥iſs.
Tinct. cantharid. ℥ſs. Miſce.

Increaſing the ſecretion from the mucous glands, by ſtimulants, when phlegmon is not preſent, may be attempted by

(No. 93.) ℞ Aq. Puleg. ℥jſß.
Oxymel. Scil. ʒj. ad ʒij.
Aq. Menth. Piper. ʒj.
M. Ft. Hauſt. Cap. quartâ quâque horâ.

(No. 94.) ℞ Aq. Puleg. ℥jſß.
Gum. Ammon. gr. x. ad xv.
Syr. Limon. ʒij.
M. Ft. Hauſt. Capt. ut ſupra.

Dr. Fordyce directs us to defend the mucous membrane from the ſalts contained in the *mucus* ſo ſecreted, with mucilaginous or oily medicines.

(No. 95.) ℞ Amygd. decort. ℥j.
Gum. Arabici ℥jſß.
Mellis ℥iv.
Aq. Font. ℔ij.
M. Ft. S. A. Emulſio—Bibat poculum frequenter.

Or the following may be given:

(No. 96.) ℞ Syrupi ex althæa
Olei Amygdal. a a ʒj.
Conſ. Cynoſbat. ℥ſs. Miſce fiat Linctus.
Capiat coch. unum parvulum frequenter.

Dr. Saunders recommends the following formulæ to be employed according to circumſtances:

(No. 97.) ℞ Mannæ ℥j.
Mucil. Arabici gummi
Ol. Amygdal.
Syr. Succ. Limon. a a ʒij. Miſce fiat Linctus, cujus capiat minutum cochlearium pro neceſſitate.

(No. 98.) ℞ Nitri purif. in pulv. trit. ʒj.
Lactis amygdal. ℥viij.
Solve conterendo, ut fiat Miſtura. Sumantur cochlearia iij. ſingulis quadri-horis.

(No. 99.) ℞ Nitri purificati gr. x.
Aquæ diſtillatæ
Mellis acetat. utriuſq. ʒv.
Acid. vitriol. dilut. ʒj. Miſce.
Sit pro hauſtu, ſexta quaque hora ſumendo.

(No. 100.) ℞ Syr. papaveris alb.
Cons. Cynoſbat.
Ol. Amygdal. utriuſq. ℥j.
Acid. vitriol. dilut. ʒj. Miſce.
Sit Linctus cujus cochleare minimum ſæpius in die paulatim delingatur.

(No. 101.) ℞ Sperm. Ceti ʒiij.
Vitell. ovi unius
Bene terantur simul; tum paulatim addantur, Aq. Cinnam.
Aquæ distill. a a ʒiij.
Syr. tolutan. ʒss. ut fiat.
Emulsio cujus cochlearia quatuor ter quaterve indies adhibeantur.

The following recipe of Dr. Saunders seems calculated for the advanced stages of the disease, when expectoration is to be promoted:

(No. 102.) ℞ Rad. Senek. contus. ʒj.
Aquæ ferventis lib. j.
Decoque ad dimidiam et cola; dein adde Sp. Piment. ʒj.
Syr. Simpl. ʒss. Dentur coch. tria ter quotidie.

Though this disease often terminates by a spontaneous sweating, this evacuation ought not to be excited by art, unless with much caution. When, after some remission of the symptoms, spontaneous sweats arise, they may be encouraged: but it ought to be without much heat, and without stimulant medicines. If, however, the sweats be partial and clammy only, and a great difficulty of breathing still remain, it will be very dangerous to encourage them.

Physicians have differed much with regard to the use of opiates in pneumonic affections. It appears, however, that in the beginning of the disease, and before bleeding and blistering have produced some remission of the pain, and of the difficulty of breathing, opiates have a bad tendency, by their increasing the difficulty of breathing and other inflammatory symptoms. But in a more advanced state of the disease, when the difficulty of breathing has abated, and when the urgent symptom is a cough, proving the chief cause of the continuance of pain and want of rest, opiates may be employed with great advantage and safety. The interruption of the expectoration which they seem to occasion, is for a short time only; and they tend often to promote it, as they occasion a stagnation of what was by frequent coughing dissipated insensibly: and therefore give the appearance of what physicians have called *concocted matter*.

Dr. Saunders joins antimony with the anodyne in the following manner:

(No. 103.) ℞ Extract. papav. alb. gr. iij.
Pulv. antimonial. gr. ij.
Fiat pilula nocte capienda.

Opium combined with calomel has of late been highly extolled in this and other inflammatory diseases by Dr. Hamilton of Lynn-Regis: who has given a full account of the success attending his practice with this remedy, for the space of sixteen years, in the

ninth volume of the Edinburgh Medical Commentaries. And ſince his recommendation, the ſame remedy has often been employed by others with great benefit.

As we ſhall have occaſion hereafter to refer to Dr. Hamilton's paper, we ſhall here introduce the account he gives of his *general mode* of employing theſe remedies.

" Blood was directed to be taken away in the beginning of the diſeaſe, in quantity proportioned to the violence of the inflammatory ſymptoms, and the age and conſtitution of the patient. And the bowels were next ordered to be emptied, either by clyſter, or (more commonly) by an eccoprotic purgative. After which, a compoſition, conſiſting of from five to one grain of calomel, and from one to one-fourth grain of opium (with any conſerve in a bolus), in proportion to the ſtrength and age of the patient, was adminiſtered every ſix, eight, or twelve hours, as the degree of inflammation, or the threatening aſpect of the diſtemper, ſeemed to require; and a plentiful dilution with barley-water, or any other weak tepid beverage, was at the ſame time ſtrictly enjoined. After taking three or four doſes of this medicine, in the courſe of twenty-four hours, the patient was generally greatly relieved; and in twenty-four more, the diſeaſe commonly gave way, and ſoon terminated. But if not relieved in the firſt twenty-four hours, and the high inflammatory ſymptoms continued, with little or no abatement (which was rarely the caſe), more blood was taken away, and this mercurial compoſition was directed to be more frequently given, and continued until the diſtemper reſolved, either by ſweating, purging, or more commonly both, or by a ptyaliſm being raiſed. I have obſerved a great variety in the effects of mercury thus adminiſtered. When the patient ſweated or purged much, the ſalivary glands did not become ſoon affected. But when the evacuations by the inteſtines and ſkin were not copious, the ſpitting was the ſooner excited. And I have ſeen large quantities of mercury given for a continuance, without affecting the mouth in the leaſt, or producing any very large viſible evacuation, yet the patient was greatly relieved. A little increaſe of urine, indeed, was all that was ſometimes to be ſeen; and we may conjecture, that the inſenſible perſpiration might ſometimes be increaſed alſo. But be that as it may. If this method of cure was employed early in the diſeaſe, the patient's was ſoon accompliſhed, whatever was the operation of the mercury. But if employed late, it was attended with more uncertainty, the caſe was rendered more doubtful, and the recovery was more ſlow, but moſt commonly the ſooneſt when the ſalivary glands were affected.

" If the fever was violent, accompanied with a dry contracted arid ſkin, emetic tartar, and ſometimes camphor, were added. And I beg leave here to obſerve, that I never found any medicine,

either in a ſimple or aggregate ſtate, produce ſo certainly, ſpeedily, and effectually, a relaxation of the ſkin, and a plentiful diſcharge from its pores, as a compoſition of calomel, opium, emetic tartar, and camphor, which has alſo the advantage of increaſing the evacuations by ſtool and urine: from which it would appear, that the glandular ſecretions, in general, are moſt eſſentially promoted by this compoſition.

"When I have been conſulted in an advanced period of any inflammatory diſeaſe, I have frequently found it neceſſary to direct bliſters, as powerful auxiliaries to this internal method of cure, to be applied to the ſide, ſternum, hepatic region, extremities, &c. as the nature and ſeat of the diſtempers, or urgency of the caſe, ſeemed to require; but very ſeldom to the head, becauſe, from repeated experience, I have long found, that the inflammation of the ſkin, and ſubſequent diſcharge, from bliſters on the lower extremities, have, in many inflammatory diſeaſes (particularly in the phrenitis and paraphrenitis), afforded much greater relief than when they had been applied to the head. But, when calomel and opium had been employed early in the diſeaſe, it was very rarely, and in very bad caſes indeed, that bliſters were found to be requiſite.

"After the inflammation began to reſolve, and the diſtemper appeared to be on the decline, the Peruvian bark, in decoction or powder, was directed to be taken with great advantage*, and a ſuitable portion of wine was ordered to be added to a proper diet, in order to recruit the debilitated ſyſtem. It is almoſt needleſs to add, that the bowels were kept ſoluble during the cure, by ſome gentle purgative, if that purpoſe was not ſufficiently anſwered by the mercurial medicine; or to obſerve, that acids were avoided for obvious reaſons."

Vomica, or *Abſceſs* of the *Lungs*.

Vomica, *Boerh.* 835. *Junck.* 35.
Pleurodyne vomica, *Sauv.* ſp. 21.

This ſometimes follows pneumonia, though the caſe is not frequent. The ſymptoms of it ſo much reſemble the phthiſis, that it can moſt properly be treated of under that head.

* Particularly in the acute rheumatiſm.

Empyema.

This is another conſequence of a pneumonia terminating unfavourably, and is occaſioned by the effuſion of a quantity of purulent matter into the cavity of the thorax, producing a lingering and painful diſorder, very often incurable.

1. *Deſcription.*] The firſt ſign of an *empyema* is a ceſſation of the pain in the breaſt, which before was continual: this is followed by a ſenſation of weight on the diaphragm; and a fluctuation of matter, ſometimes making a noiſe that may be heard by the by-ſtanders: the acute fever is changed into a hectic, with an exacerbation at night: a continual and troubleſome dry cough remains. The reſpiration is exceedingly difficult, becauſe the lungs are prevented by the matter from fully expanding themſelves. The patient can lie eaſily on that ſide where the matter is effuſed, but not on the other, becauſe then the weight of the matter on the mediaſtinum produces uneaſineſs. The more the hectic heat is augmented, the more is the body emaciated, and its ſtrength decayed. In ſome there is danger of ſuffocation when they ſtoop down, which goes off when they alter that poſture of the body; and in ſome there is a purulent ſpitting.—Theſe ſymptoms are accompanied with great anxiety, palpitations of the heart, and faintings. Sometimes the patients have a ſenſation like a hot vapour aſcending from the cavity of the thorax up to the mouth. Others, in a more advanced ſtate of the diſeaſe, have a putrid taſte in the mouth. At the ſame time, profuſe night-ſweats waſte the body, and greatly weaken the patient. The face at firſt grows red on that ſide where the matter lies, at laſt the Hippocratic face comes on, and the eyes become hollow. The pulſe, eſpecially on the affected ſide, is quick, but more frequently intermitting. Sometimes the nails are crooked, and puſtules appear on the thorax; and frequently, according to the teſtimony of Hippocrates, the feet ſwell, and on the affected ſide of the breaſt there is an inflation and ſwelling of the ſkin.

2. *Cauſes.* &c.] An empyema may ariſe either from the burſting of a vomica of the lungs, or from a ſuppuration taking place after the inflammatory ſtage of the pneumonia; or ſometimes from a ſuppuration in the caſe of a quinſy, when the inflammation had extended to the aſpera arteria, from whence ariſes a kind of bloody ſpittle, and the patients are afflicted with an empyema, unleſs they die on the ſeventh day of the diſeaſe, according to the obſervation of Hippocrates. It may ariſe alſo from external violence, as wounds of the thorax, &c. blood extravaſated, corrupted, or changed into pus. Like the vomica, it is a rare diſeaſe, but may attack all thoſe ſubject to pneumonia.

3. *Prognosis.*] Very few recover after an empyema has been once formed, especially if the operation of paracentesis be neglected. After this operation is performed, if a great quantity of bloody fetid pus be discharged, if the fever continue, and if the patient spit up a purulent, pale, frothy, livid, or green matter, with a decay of strength, there is no hope: but when a small quantity of pus, of a white colour, not very fetid, is discharged; when the fever and thirst presently cease, the appetite returns, and fæces of a good consistence are discharged, the strength also returning in some degree; there is then hope of a perfect recovery. If the matter be not dried up in seven weeks' time, the disease readily changes to a fistulous ulcer, which is very difficult to cure. An empyema affecting both sides of the thorax is more dangerous than that which affects only one.

4. *Cure.*] This consists in evacuating the purulent matter contained in the cavity of the thorax, which is best done by the operation of paracentesis, to be performed by a surgeon. The best mode of doing it, is to draw the lax skin as much upwards as possible before the puncture is made; so that after the fluid is evacuated, the skin may form a valve, which should afterwards be closed with adhesive plaster and a proper bandage. The same internal medicines are to be given as in a phthisis.

In the Memoirs of the Medical Society of London, we find the following case of an abscess of the breast successfully treated, by Dr. Farquharson, of Edinburgh.

"Mr. William Lowndes, aged eight, a young gentleman of a strong constitution and very active disposition, on the evening of the 9th of June, 1786, while overheated at play, fell from a considerable height into a deep river, about two hundred yards from his father's house. He struggled much, and was twice under water. In about five minutes he was taken out, carried home, stripped, put to bed, rubbed dry, and drank some brandy and water.

"He slept well that night, was in perfect health next day, and eat his dinner with uncommon appetite. About seven o'clock in the evening he complained of being very drowsy, went to bed, and slept some hours. On waking he was seized with slight shiverings and sickness at stomach, followed by severe retching and vomiting, which continued during the night, and increased in the morning.

"June 11th, about eight o'clock in the morning, Mr. White, surgeon, and I, were called to see him. He complained of great nausea and headach; but he had little thirst: his tongue was not furred, nor was his skin much hotter than ordinary: his pulse was soft and regular, and beat 120 in the minute.

"We ordered him a vomit immediately, a large dose of saline mixture every two hours, and a diaphoretic anodyne-draught at

bed-time. Next morning we found him conſiderably eaſier; the vomiting had ceaſed, and his pulſe had fallen to 90. However, for the three following days he grew worſe; his pulſe roſe to 126, and was feeble and unſteady; his thirſt increaſed; his ſkin became hot and dry; his vomiting returned; he paſſed a great quantity of urine, moſtly thin and pale, though ſometimes thick and high coloured; and he had a great degree of ſubſultus tendinum.

"We ordered the ſaline draughts to be more frequently repeated; diluting drinks to be uſed in great quantity; the diaphoretic draughts to be exhibited at bed-time, and proper laxatives to be given occaſionally.

"June 15th, he began to recover, and his pulſe again fell to 90, when he was ſeized with a violent pain in the left breaſt immediately under the nipple. This laſted only half an hour the firſt day, but returned with greater violence the day after; his pulſe roſe to 120, and he breathed with great difficulty; he likewiſe complained of his belly, which was ſometimes conſiderably ſwelled.

"Theſe complaints yielded in ſome degree to bleeding, fomentations, bliſters, diaphoretics, and laxatives; but there ſtill remained ſuch quickneſs of pulſe, ſuch pain in the left ſide, ſuch difficulty of breathing, and ſuch anxiety, as indicated ſome dangerous affection of the breaſt. To remove this, the ſaline mixture, ſaline laxatives, worm medicines, antimonials, the warm bath, milk diet, country air, and gentle exerciſe, were tried in vain.

"July 15th. All the ſymptoms now indicating the preſence of ſome fluid in the thorax, Dr. Stevenſon of Glaſgow was conſulted. On examining our young patient we perceived a conſiderable ſwelling on the left ſide of his breaſt, which pointed between the ſixth and ſeventh ribs, about half way between the ſternum and ſpine. The pulſation of his heart could be diſtinctly felt on his right ſide; his pulſe was at 146; his ſkin was hot and remarkably dry, and he was much afflicted with a hard tickling and almoſt conſtant cough. He likewiſe complained of violent pain in the left ſide of his neck and left arm. The muſcles of that ſide of his neck were very rigid, and the veins turgid. He alſo leaned ſo much to the left ſide that he had the appearance of being deformed.

"As his urine was ſcanty, his belly ſwelled, and his thirſt conſiderable, there was reaſon to ſuſpect a complication of hydrothorax with aſcites; and with a view to this, Dr. Stevenſon ordered ſmall doſes of calomel at proper intervals, with a ſufficient quantity of cryſtals of tartar, to give him two or three ſtools a-day; at the ſame time an anodyne embrocation was ordered for his neck and arm.

" By perſiſting in this courſe for ſome time he became eaſier; his urine increaſed in quantity, depoſiting a great deal of brawny ſediment; and the ſwelling of his belly diſappeared. But as the quickneſs of pulſe, the cough, and difficulty of breathing, ſtill continued; as the pulſation of the heart on the right ſide had become more perceptible, while he could not lie, even for a moment, on that ſide, without danger of immediate ſuffocation; and as the tumor between the ribs had increaſed; an operation was determined upon, and a poultice ordered, that the integuments might become thinner.

" Auguſt 7th. Mr. White made an opening into the cavity of the thorax through the moſt depending part of the tumor. A pound of pure bland pus was diſcharged immediately, and in about three hours as much more. A ſmall linen tent was introduced to ſerve as a conductor to the matter; and his ſide was dreſſed in the ordinary manner.

" Every ſymptom was now much relieved; his pulſe came down to 116; the pulſation of his heart on the right ſide diſappeared; he ſlept three hours on that ſide the ſecond night after the operation; the cough left him; he breathed without difficulty, and the pain of his neck and arm became moderate. A ſmall ſilver canula was introduced into the wound to give the matter free vent; his belly was ordered to be kept open by occaſional doſes of cryſtals of tartar, and a milk diet was ſtrictly enjoined.

" Things now wore a promiſing aſpect; the matter, though diſcharged in great quantity, was perfectly mild and free from air; and he ſeemed to be gaining ſtrength very faſt, when, on the fifth day from the operation, he became feveriſh, hot, and reſtleſs; his cough and difficulty of breathing returned; the matter acquired an offenſive ſmell, and his pulſe roſe to 140. He now felt the ſilver canula ſo uneaſy that we were obliged to withdraw it, and uſe only a bit of bougie. However, after taking a doſe of ſalts, and increaſing the quantity of the cryſtals of tartar, ſo as to keep his belly very open, the matter became more mild, his pulſe fell to 120, and the fever abated much. He was now ordered aſſes' milk, which however could not be procured for him in ſufficient quantity.

" Although his pulſe was ſeldom under 120, yet he mended ſlowly till about the ſixth of September, when he began to complain of ſhivering fits and an aggravation of all his former ſymptoms. There now appeared a conſiderable inflamed tumor, about two inches higher than the wound, which was diſcuſſed in a few days by poultices and occaſional laxatives; and all the ſymptoms were much relieved by a great diſcharge of matter from the wound after a violent fit of coughing.

He continued to recover till the 22d, when the ſhiverings returned, and a ſecond tumor appeared in the ſame ſpot as the firſt.

Every precaution was taken to diſcuſs it as formerly, but without effect, as, on the 27th, it burſt and diſcharged a conſiderable quantity of matter, and he again became eaſier.

" He was now ordered the bark with proper laxatives; demulcents for his cough; the milk and vegetable diet were continued, and he drank aſſes' milk in plenty. This courſe agreed with him for ſome time; he became ſtronger, could walk with more freedom, and even bear the motion of a carriage: but about the beginning of October the matter became fetid, although there was a conſiderable diſcharge from both wounds; his pulſe continued at 120 in the morning, and he had a hectic paroxyſm every afternoon, when his pulſe roſe to 130.

" At this time Dr. Lettſom and Mr. John Hunter, of London, were conſulted. Dr. Lettſom approved of the bark, but wiſhed it to be conjoined with a ſaline effervеſcing draught to prevent it from increaſing the fever. He ordered cicuta to be exhibited in as large doſes as the patient's ſtomach would bear. At the ſame time he recommended a trial of a tepid bath of ſea water, heated to 85 or 90 degrees, every other day, or as often as the patient's ſtrength could bear it. He wiſhed ſome light animal food to be given as ſoon as the ſtate of the fever would admit of it.

" Mr. John Hunter was of opinion that nature ſhould be as little interfered with as poſſible; and that neither linen tent nor canula was neceſſary, if the matter paſſed off freely; he approved of theſe, however, if at any time the matter was in danger of being confined for want of a proper outlet. In caſe of formation of new abſceſſes he recommended poultices.

" At firſt the effervеſcing draughts diſagreed with the patient's ſtomach, and puked him in the night, but afterwards he felt no inconvenience from them. He was now allowed ſome weak broth and a little light animal food at dinner; at the ſame time the ſtricteſt attention was paid to the regulation of his diet.

" About this time he was put into a tepid bath of ſea water, heated to 88 degrees, every other night; this brought off a great quantity of matter, lowered his pulſe, and procured reſt.

" He now became ſo much ſtronger that he could walk about a great deal without difficulty. The matter, however, at laſt became ſo thick that very little of it was diſcharged unleſs he either coughed, ſneezed, or cried; this occaſioned the formation of another abſceſs, which burſt about an inch above the ſecond opening.

" Nov. 4th. Mr. Bell of Edinburgh was conſulted. He was decidedly of opinion that the principal ſymptoms aroſe from the matter being pent up; and therefore adviſed that an opening ſhould be made large enough to admit of the matter being diſcharged with freedom; and he thought this would be eaſieſt done by laying the three openings into one. However, if the matter ſtill appeared to be confined, he thought it expedient to make a

new opening between two of the inferior ribs, in order to procure as depending a drain as poſſible. If every other method failed he adviſed a canula to be introduced of ſufficient length to reach the bottom of the cyſt. He approved of the bark being continued, and thought a little more animal food might prove ſerviceable.

"Nov. 7th. Mr. White laid the three openings into one; a good deal of matter and ſome blood came off immediately, and for ſeveral days a free diſcharge was kept up, which brought down his pulſe from 136 to 112. He was now put on a fuller diet, and it agreed with him better than formerly; he gained ſtrength and fleſh daily; but the healing proceſs now went on ſo faſt, that, notwithſtanding eſcharotics were applied daily to the wound, it was almoſt conſtantly in danger of being choked up by the freſh granulations; and every five or ſix days an accumulation of matter raiſed his pulſe to 140, and gave him great uneaſineſs, till a fit of coughing, ſneezing, or crying, forced it off.

"Dec. 3d. Mr. White enlarged the opening conſiderably, which, by giving vent to the pent-up matter, relieved all the ſymptoms for ſeveral weeks, and brought down the pulſe to 104 in the morning, yet he ſtill had an evening exacerbation which raiſed the pulſe to 120.

"About the beginning of the year 1787 our patient caught cold by ſtanding ſome hours on the ice; this, however, yielded to the common remedies, and produced no bad effects; on the contrary, the cough brought off a great quantity of matter, and aſſiſted in keeping the external wound open.

"From time to time we had the benefit of Dr. Lettſom's and and Dr. Stevenſon's advice, and their preſcriptions were applied as far as the circumſtances of the caſe would admit. The medicines, diet, warm bath, and exerciſe, were regulated according to our patient's ſituation; and every thing that depended on the phyſician's art ſucceeded according to our wiſhes: he now recovered his ſtrength and fleſh ſurpriſingly; his appetite returned; he grew ſtraighter; ſlept well, and could bear the motion of a carriage, walk, or ride, without any inconvenience; yet all our induſtry in applying eſcharotics, and uſing other methods, could not prevent the matter from accumulating frequently and producing the uſual train of bad ſymptoms. There was now an abſolute neceſſity of either making a new opening between two of the inferior ribs, or of introducing a canula of ſufficient length to reach the bottom of the cyſt, that there might be a conſtant free diſcharge of the matter, ſo that the cyſt might contract and the ſides of it adhere.

"As Mr. Bell had formerly adviſed theſe meaſures in very ſtrong terms, he was called to ſee our patient on the 28th of May. On examining his ſide with a probe he found the cyſt, though narrow, near five inches deep, and had reaſon to ſuſpect

that one of the ribs was carious. He ordered a long leaden canula to be introduced into the wound; and, while it was preparing, ordered a bougie to be uſed, which was to be frequently withdrawn to allow the matter to be freely diſcharged.

"In a few weeks after the introduction of the tube a ſurpriſing change took place; the hectic ſymptoms diſappeared; his pulſe fell to 100; he recovered his ſhape perfectly; his appetite increaſed ſo much that we were obliged to lower the quality of his food; he could uſe the moſt violent exerciſe, and could lie in bed on either ſide, and his head off the pillow, without difficulty. In ſhort the diſcharge leſſened rapidly, and by ſhortening the canula gradually the ſore healed from the bottom without any exfoliation of the carious rib, or any accident whatever, except our patient's catching cold on his return from Edinburgh, whither he had gone to wait on Mr. Bell about the middle of Auguſt. Although the cold increaſed the diſcharge for a few days, yet it yielded to the common remedies, and the cure went on without interruption. By the end of September the canula was withdrawn, and the wound completely cicatrized.

"Since that time he has continued in perfect health; has regained his loſt growth, and takes as great a ſhare of the moſt active diverſions, ſuch as dancing, leaping, running, and wreſtling, with as much eaſe to himſelf as any boy of his age.

"I muſt here remark, that, during the whole courſe of this tedious caſe, our preſcriptions were completely fulfilled, and our directions punctually obeyed by the patient's parents, particularly by his excellent mother, who, with a ſelf-denial and perſeverance highly worthy of imitation, nobly ſacrificed every pleaſure that a ſociable diſpoſition and wealth could procure, and dedicated every moment that could be ſpared from the care of the younger part of her family to the melancholy taſk of nurſing her ſick ſon; and ſhe has now the pleaſure of reflecting, that ſhe has contributed in ſo great a degree to reſcue, from almoſt certain death, a child who promiſes to be a comfort to his family, and a valuable member of ſociety."

From the ſame work we ſelect the following hiſtory of an empyema which terminated fatally, by Dr. Lettſom. Alluding to the caſe juſt related, the ſymptoms of which, it ſeems, were ſo analogous to thoſe of the preſent, that he once expected a favourable termination, the doctor ſays,

"The diſeaſe of the preſent ſubject commenced on the 27th of April, 1795, at the age of ſeven years. Previouſly to this time, he was a fine grown healthy boy, fond of exerciſe, and appeared at his age rather athletic than otherwiſe. He uſed to eat heartily, and with little maſtication; which ſometimes demanded evacuants, and cooling medicines; but beſides theſe, little attention was requiſite. He was very well on the preceding day of

attack, and had dined with his parents, perhaps with indulgence of appetite; however, on that evening, after being taken a little diſtance, as uſual, to his ſchool, he felt indiſpoſed, and early in the morning of the 27th there was ſo much oppreſſion about the ſtomach, as to induce the ſurgeon who attended, to adminiſter an emetic; during the operation of the emetic much indigeſted matter was diſcharged, and a conſiderable quantity of ropy mucus, with ſome ſtreaks of blood. He was on the ſame day removed to London again, and in the evening I viſited the patient, whom I found troubled with cough, pains of the ſtomach, dyſpnœa, a coſtive body, and a high degree of fever, with vomiting of blood occaſionally. A laxative medicine was immediately given, blood was taken from the arm, and cooling medicines, and fluids as nouriſhment, were recommended.

"It would be uſeleſs to enumerate the various minutiæ attending this tedious caſe. The expectoration of blood continued for many days, although a rigid perſeverance in antiphlogiſtic remedies and diet, with occaſional bleeding from the arm, and bliſtering the ſternum, were adopted; the pulſe ſeldom fell under 120 ſtrokes in a minute; the difficulty of breathing was diminiſhed, but not removed, and the cough was frequent, ſometimes with expectoration of mucus, but not latterly of blood.

"Towards the concluſion of May, the patient had become extremely weak, and the pulſe ſeldom under 140 in a minute; the breathing was more difficult, and every ſymptom of approaching diſſolution was preſented. About this time an enlargement of the left ſide of the thorax became preceptible; it gradually increaſed, and at length appeared to Mr. Blicke, ſurgeon of Bartholomew's hoſpital, who now attended, to be likely to ſuppurate. On the 9th of June it was ſo prominent, and a fluctuation of matter ſo obvious, that he judged it requiſite to make an inciſion between the ſixth and ſeventh rib into the tumor; it was ſucceeded by a diſcharge of about a pint and a half of pus.

"Although the debility remained the ſame, the breathing was not ſo laborious; the pulſe became ſlower, and a fairer proſpect of recovery preſented. Day after day the ſymptoms of danger diminiſhed; the purulent diſcharge was, however, ſeldom leſs than two large ſpoonsful a day; and ſometimes, without any change in the complaints, it increaſed to a quarter of a pint; this quantity, at leaſt, was diſcharged about the beginning of July. On the next day, there oozed through the opening a little mucus only; and from this period, the diſcharge greatly diminiſhed; frequently, however, it was purulent, though rarely in any conſiderable quantity, and in Auguſt it was ſcarcely perceptible; the child was now able to walk out. The opening was occaſionally enlarged from a tendency to heal; to prevent

it, a little canula, or a doſſil of lint, was introduced. Air, in the act of inſpiration and exſpiration, conſtantly ruſhed in and out through the perforation, with more or leſs velocity; it was ſometimes ſo conſiderable, as to extinguiſh a ſmall candle upon coughing.

"During the autumn of 1795, and the winter of 96, the health of the child was conſiderably reinſtated; he recovered fleſh and ſtrength; the appetite was good, and the ſpirits chearful; but the breathing was not ſo free as natural, although he could lie down in any poſition; nor was the pulſe ſo calm as in health; it was under 100, but rarely 70, and occaſionally quicker.

"The diſeaſe was accompanied with but a ſlight cough in general; on taking cold it was, however, ſometimes very troubleſome, though little expectoration reſulted.

"In the ſpring of 1796, the wound continued to ooze out a little purulent diſcharge, the pulſe was rather quicker, and frequent ſlight feveriſh ſymptoms occurred; when theſe were mitigated, the debility continued, or rather augmented. It was hence thought adviſable, in the ſummer of 1796, to try ſea air and tepid ſea-bathing, and he was removed from the vicinity of London to Ramſgate, for this purpoſe.

"It would not, I preſume, be eſſential here to detail the various remedies exhibited during a long and painful illneſs, not only under my immediate direction, but alſo in conjunction with Dr. James Sims and Dr. Latham, with the unremitting care of Mr. Midford. During the inflammatory ſtate of the diſeaſe, bleeding, local and general, were adopted, with laxatives, and a general antiphlogiſtic treatment, with reſpect to diet, as well as medicine. Afterwards alteratives, ſuch as mercurials, and cicuta, were variouſly exhibited, with neutral ſalts and antimonials. In the ſtate of debility the Peruvian bark, ſolutions of ſteel, and alſo of myrrh, were employed. External general bathing and local fomentations were recommended.

"Theſe were varied according to the ſymptoms of fever, of dyſpnœa, debility, and other circumſtances of the patient.

"On the 22d of June he was firſt ſeen by Dr. Powell, then on the ſpot, and from his notes the following hiſtory of the progreſs, fatal termination of the diſeaſe, and ſubſequent diſſection, are taken.

"He was now much emaciated, and ſo weak, as ſcarcely to be able to walk acroſs a room; his breath ſhort, and any exertion brought on fits of coughing, from which he was generally free during the night; a conſtant ſenſation of huſkineſs in the throat; the face had a ſort of preternatural fulneſs, and the lips and fingers a purple tinge, particularly before coughing; this, however, varied much in its degree, and ſometimes did not exiſt at all. Pulſe not leſs than 120, and very ſmall. Tongue very

tender, and covered with irregular patches of a white crust, but this might partly depend on the teeth, which were rugged and bad. He lived almost entirely on asses' milk. Body costive. No regular heat or perspiration like hectic, but occasional flushings, and especially in the face. The wound still discharged small quantities of sweet and healthy pus.

"As considerable heat and costiveness had attended the use of small doses of opium for some days previous to this time, cicuta was substituted for it, and its dose was increased to gr. v. thrice a-day, with evident advantage, as far as the cough and huskiness were concerned, till July 10, when he thought it unpleasant, and that it occasioned sickness, and therefore refused to continue it. He was not grown weaker, and his appetite was improved, for he wished for animal food, and no objection appeared to indulging him; nor did it produce any inconvenience, except that a violent fit of coughing once followed immediately upon his meal. The discharge from his side had continued unaltered, and his body had been more regular, but his pulse had never sunk below 120.

"On the 24th of July there was more blackness about the lips and fingers, with more frequent recurrence of dyspnœa, diminution of appetite, and irregular alternations of heat and cold. Bark was ordered, with acids, but as they affected his bowels, they were not long continued; and it seemed that much of the present exacerbation depended upon the weather, which was stormy, and the wind blew for many days with immense force immediately upon their house, which was in an elevated situation, directly over the sea. It was therefore recommended that some less exposed situation should be tried, and he was accordingly removed from Ramsgate to a well sheltered house at Margate, and, for some days, his breath was considerably improved by the change; but, on August 14, he had a most dreadful attack of suffocation. The nurse on returning to the bed, where she had left him apparently easy, found him cold and motionless, with a deep blackness over his face and hands; from which state he began to recover on being moved quickly. I found him oppressed in his breath to a most distressing degree, with his face turgid and purple, and his pulse very quick, and so weak, as to be scarcely distinguishable. Some white wine was given at the spur of the moment, and it revived him and alleviated his dyspnœa; and when another fit seemed approaching, it was again given, and prevented it in a considerable degree. Some volatile medicines were therefore ordered, and Dr. Reynolds was requested also to see him, when it was concluded to give him some medicine, with cicuta out of decoction of bark, and the occasional use of his volatile medicines was also permitted, and to take away some blood by cupping; and, unless relief was obtained, to take some

alſo from the arm; and as none of his ſymptoms had remitted, ℥iv. were taken the next morning, the craſſamentum of which coagulated very looſely, and was broken down by the ſlighteſt touch. About mid-day the return of his ſuffocation was more frequent, his face pale and full of anxiety, and he could only breathe when ſupported upright, and had frequent ſpaſms of the muſcles of the face and of the arms. The more ſtimulating plan was therefore again adopted. His cheſt was bliſtered, and with his volatile medicines muſk alſo was given. Of the former he took moſt liberally, and ſeemed to be much relieved by its uſe; for ſix days he had never taken leſs daily than ſpirt. ammon. comp. ſpir. lav. comp. ää ℥ſs. out of cinnamon water; and the only food he took was a thick ſpermaceti mixture. On the night of the 20th he appeared faſt approaching to his diſſolution. The pulſe was not perceptible, except now and then, in the ſmalleſt poſſible undulations. The face and extremities were pale and cold, and no medicine could be got down. By keeping a toaſt ſoaked in white wine in his mouth, by the application of bliſters and gentle frictions, he again rallied, and it appeared that in ſixteen hours the wine given him had amounted to five pints. He felt on the morning of the 22d, tolerably well; his pulſe was little above 100; his breath eaſier; he had dreſſed himſelf, and paſſed a natural copious evacuation; he took ſome breakfaſt, amuſed himſelf as uſual, and was carried out. I gave him myrrh and ſteel in tolerable quantities, and he went on without any return of his ſuffocation till the afternoon of the 26th.

"He had been out a good deal, and had taken a ſufficient quantity of food, but after dinner he leaped ſuddenly from the ſofa, and for ſome minutes exerted more ſtrength than his mother and two nurſes could overcome; after this his ſuffocations and difficulty of breathing came on as before.

"Although his ſenſes were perfect, his countenance, his difficulty of breathing, and the vaſt ſize to which his legs had ſwelled within a very few hours on the 28th, ſhewed that he could not long exiſt, and he died early in the morning of the 29th.

"The body was examined by Mr. Gilder, ſurgeon, and the following appearances were obſerved. Externally the left ſide of the thorax was ſomewhat more depreſſed than the right, which proceeded chiefly from a diminution of the pectoral muſcle on that ſide; between the ſixth and ſeventh ribs there was a depreſſion more ſtrongly marked. The abdomen was much diſtended with air; but its whole contents were perfectly free from any appearance of diſeaſe.

"In the right cavity of the thorax, and in the pericardium, there was no more than the uſual quantity of fluid.

" The heart ſeemed perfectly healthy.

" The right lung was loaded with blood, and, probably, of larger relative proportion than was natural; one very ſmall cheeſy tumor was found in the lower part of it, but to the eye, and to the touch, the whole gave a general idea of health.

" Before the examination of the left lung a probe was introduced; and paſſed very readily from the opening between the ſixth and ſeventh rib.

" The left lung adhered very ſtrongly to the forepart of the ribs, and on diſſecting it away, a cavity came into view into which the probe had paſſed, and which was bounded by ſtrong adheſions of the lung to the ribs, from the firſt to the ſeventh, to the ſpine for the ſame length, and to the diaphragm; from this cavity the matter had proceeded during his life, and ſome, the quantity of which an accident prevented us from meaſuring, was now found in it, but it was not more than a teacupful, and differed from the former diſcharge only in being more watery.

" The lung itſelf was compreſſed into a very ſmall ſpace, and the ſubſtance of it had no communication with the abſceſs; it did not expand on being blown into, contained no air in its cells, and muſt have been totally uſeleſs. The pleura was deſtroyed, and there did not appear to be any natural proceſs going on for repairing the injury."

We ſhall conclude this ſubject with a caſe of empyema, treated by Mr. Waſtell, a practitioner in London, which appears to have ended ſucceſsfully.

" May 16, 1793, Mr. John Metcalfe, aged 16, of an athletic make, and ſanguine habit, was expoſed to violent cold, when overheated by exerciſe. In the evening he complained of a ſharp pain in his left breaſt, and acroſs his loins; and feeling chilly, he drank ſome warm brandy and water, and went to bed. He was reſtleſs and feveriſh in the night; and the next morning, the pain being more ſevere, Mr. Waſtell was ſent for.

" He then complained of a pain acroſs his cheſt, and particularly in the region of his left kidney. His ſkin was very hot, his face like ſcarlet; his breathing difficult and painful; his pulſe 100, hard and full. Eighteen ounces of blood were taken away; a large bliſter was applied to his ſide; and various medicines were given. The next morning the ſymptoms were rather more favourable; but in the evening they were much aggravated; his ſkin was dry, his cough hard, &c. Twelve ounces of blood were taken away. May 19th, he was better; but on the 20th his breathing became very difficult, and the pain in his cheſt more ſevere: his pulſe was 110 and tenſe. He loſt five ounces of blood, and Dr. Saunders was called in; who ordered eight ounces more of blood to be taken away, and four grains of James's powder to be taken every four hours, with a ſaline draught.

"On the 25th the pain was nearer to the *vertebræ*, and on the 2d of June it abated, and symptoms of a crisis appeared. The left carotid artery beat 110 times in a minute; the pulse at the wrist was 88.—June 4th, the pain was near the left nipple; and the next day it was in the left shoulder.—June 12th, he continued much in the same way; the pain shifting from his shoulders to the right side, which was very acute when he coughed. Three ounces of blood were taken from the back by cupping; and his side was dry-cupped, which gave great relief.

"July 3d, a tumor appeared under his left nipple, attended with pain, and projection of the ribs. A plaster of empl. litharg. comp. was applied. July 14th, his cough continued to be troublesome, with acute pains. July 20th, the tumor was larger: a fresh plaster was applied. The pulsation of the carotid artery was 140 times in a minute; that at the wrist 110. This day he said he perceived something give way in his chest: his pain then ceased. July 23d, he had a good night, coughed seldom, and had very little pain. This day Mr. Wastell observed his heart beat on the right side. July 25th, the tumor was less, and the pain scarcely perceptible. From this time his cough troubled him but seldom.

"Aug. 6th, a small tumor was perceived between the 7th and 8th ribs, on the right side: the heart beat still more on the same side. Aug. 10th, Mr. Turnbull, surgeon to the Eastern Dispensary, examined him with Mr. W. When placed in a recumbent posture, the small tumor on the right side emptied itself: when pressed upwards it gave great pain. The pulsations at the wrist were 110; those at the heart more frequent. The rising of the ribs on the left side continued nearly the same: the tumor on the right side became painful. Aug. 14th, on applying his hand to the tumor on the right side, Mr. Wastell could perceive it fill and empty itself, every time the patient coughed. Aug. 16th, the tumor was larger; and filled at every expiration. Mr. W. proposed opening it, but was not permitted. Aug. 19th, the tumor was very painful, and discoloured.

"Aug. 20th, this day, at noon, he had an incessant cough, and began to spit thick matter, of a greenish colour: when Mr. W. came to him at five o'clock, he had spit three half pint basonsful, and was like to be suffocated. Dr. Turnbull, physician to the Eastern dispensary, accompanied Mr. W. and agreed with him in the necessity of an immediate operation; which Mr. W. performed, by making an incision between the 7th and 8th ribs, on the right side, and let out 52 ounces of thick matter, similar to what had been spit up. The part was dressed with a poultice; and the patient was put to bed. The pulsation of the heart was then near to the right axilla; and too quick to be counted: the pulse at the wrist 136; his breathing 48 times in a minute. He

was placed on his right side, and an anodyne was given. His appetite did not fail during his whole illness; but his strength was much reduced.

"About five days after the opening was made, the heart began to approach towards the sternum, and the tumor on the left breast gradually disappeared. The discharge, both by the wound, and by the mouth, continued copious for some days; then it diminished. Nine days after the operation, the heart was under the sternum.

"Sept. 1st, he spat freely by night, but not in the day; and as the discharge from the wound was lessened, and a fulness appeared below the orifice, Mr. W. enlarged the aperture, and applied a poultice. Three days after, the heart was perceived on the left side of the sternum; and the patient was better in all respects. Sept. 6th, as the expectoration of matter, by night, continued, Mr. W. made two issues between his shoulders, to hold three peas each, and gave him tonics, and an opiate at bed-time. From this time his recovery was rapid, and he gained strength daily.

"On the 26th of September he walked from Burr-street to Broad-street, distant a mile and a half, to see his physician, Dr. Saunders, and to let him know that his heart was again in its proper place; and walked back without the least inconvenience. He now gained flesh, and began to recover his florid complexion.

"Sept. 30th, he went to Stockton, his native place, by sea; and about a fortnight after, informed Mr. W. by letter, that he was able to ride out every morning without fatigue, that the wound in his side was healed, but the issues still continued to discharge freely."

Pleuritis Spuria Epidemica.

This disease may, not improperly, be taken notice of in this place. It was known by the following signs: A pain on the left side of the chest; a continual cough, but without expectoration; great pain in the head; dyspnœa; a frequent and weak pulse.

This epidemic disease is described by Dr. Home in the following terms:

"In general it came on with shivering, soon succeeded by heat; some had no cold fit, but were first attacked with heat and moisture of the skin; soon after came on a severe pain in the side, generally amongst the short ribs, which was increased by inspiration, and made breathing difficult. The part was sore upon pressure, but not swelled and discoloured; and the patient could not lie upon that side, which was always the left. A painful dry cough was present, but sometimes it was attended with a small viscid ex-

pectoration; there was also a constant severe head-ach. The skin was moist, yet a sensation of cold took place, and sometimes the shivering and sweating were alternate. The tongue was a little white, but moist; there was no great thirst, and the appetite was not much impaired. Sometimes there was nausea; and the state of the body was various. The pulse was from 90 to 136 in a minute, always soft and weak, and in some it could scarcely be felt.

"The distressing symptoms were four, and to relieve them seemed to be the chief indications of cure: they were, the stitch, cough, head-ach, and want of sleep.

"For the stitch, topical bleedings and cupping were of some use; but blisters were more effectual.

"For the cough, a mixture of the mucilage of gum-arabic, without any acid, was of use. The doctor thinks it is bad practice to join acids with mucilaginous medicines. Blisters to the back relieved it.

"The head-ach was always relieved by blisters applied to the temples.

"To promote sleep, the following draught was given at bed-time, but the patient had a bad night:

(No. 104.) ℞ Antimon. tartar. gr. ss,
Aq. fontan. ℥iss.
Tinct. opii gtts. xx.
Misce fiat Haustus anodynus.

"Had the quantity of opium been increased, and the pediluvium been used at the same time, it probably might have answered the intention.

"It is of consequence to distinguish this disease from the pleuritis vera, which an attention to the state of the pulse, and the absence of febris synocha, will clearly point out, as the methods of cure for the latter disease might, in the former, endanger the patient's life."

Dr. Gregory mentions the *spurious pleurisy*, but it varies much from the one just described; for he says, "it is known by the want of cough, or its continuing without any expectoration; that, added to the soreness upon pressure, there was often external tumor and redness."

These circumstances have induced Dr. Temple to put the following Queries. May they not both be *rheumatic* affections?—What is the *pleuritis spuria* of Boerhaave?

Genus XIII. CARDITIS.

Inflammation of the Heart.

Carditis, *Sauv.* gen. 111. *Vog.* 54.
Pericarditis, *Vog.* 53.
Carditis ſpontanea, *Sauv.* ſp. 1. *Senac.* Traité de Cœur, lib. iv. cap. 7. Mem. de Berlin, 1756.
Eryſipelas pulmonis, *Lomm.* Obſerv. lib. ii.

1. *Deſcription.*] This diſeaſe is attended with all the ſymptoms of pneumonia, but in a higher degree; it is beſides ſaid to be accompanied with hydrophobic ſymptoms, fainting, palpitation of the heart, a ſeeming madneſs, a ſunk and irregular pulſe, watery eyes, and a dejected countenance, with a dry and black tongue. On diſſection, the heart and pericardium are found very much inflamed, and even ulcerated, with many concretions of lymph.

Dr. Fordyce, under the head of Inflammation of the Pericardium, ſays, "this alſo has many things in common with the inflammation of the *pleura*; but the pain is *deeper ſeated*, and is not ſo much increaſed upon inſpiration.

"If the *heart* is affected, the pulſe becomes ſmall, irregular, and intermittent, with immenſe anxiety. The patient falls into *ſyncopes*, and is ſoon deſtroyed."

2. *Cauſes*, &c.] The ſame as in the *pneumonia*.

3. *Prognoſis.*] In the *carditis* the prognoſis is more unfavourable than in the pneumonia; and indeed, unleſs the diſeaſe very quickly terminates, it muſt prove fatal, on account of the conſtant and violent motion of the heart, which exaſperates the inflammation, and increaſes all the ſymptoms.

4. *Cure.*] Here bleeding is neceſſary in as great a degree as the patient *can poſſibly bear*, together with bliſtering, and the antiphlogiſtic regimen likewiſe carried to a greater height than in the pneumonia; but the general method is the ſame as in other inflammatory diſeaſes.

From the immediate connection of the parts, there may occur, at the ſame time, a *Paraphrenitis, or Inflammation of the Diaphragm*, of which Dr. Fordyce gives the following account.

"This ariſes from the ſame cauſes as the inflammation of the *pleura*. The pain is very violent and deep ſeated in the lower part of the breaſt, or under the ſhort ribs; or ſtriking between them and the back: the belly is drawn up, and kept as much at reſt as poſſible; the reſpiration is exceſſively quick, ſmall, and difficult, and performed principally by the muſcles of the breaſt; the patient is frequently affected with ſickneſs and hiccough; the pulſe is for the moſt part very frequent, ſmall, hard, and often irregular; there is great anxiety; the other ſymptoms of irritation come on, and

death frequently enſues. If this does not happen, the progreſs, termination, and manner of treatment, are nearly the ſame as in the pleuriſy."

Genus XIV. PERITONITIS.

Inflammation of the Peritonæum.

Sp. I. *Inflammation of the Peritonæum* properly ſo called.

Peritonitis, *Vog.* 62, *Lieutaud*, Hiſt. anat. med. lib. i. obſ. 3. *Raygerus*, apud eund. lib. i. obſ. 341. *Morgagn.* de ſed. LVII. 22.

Sp. II. *Inflammation of the Peritonæum* extended over the *Omentum.*

Epiploitis, *Sauv.* gen. 106. *Sag.* gen. 308.
Omentitis, *Vog.* 61.
Omenti inflammatio, *Boerh.* 958. et Ill. *Van Swieten*, Comm. *Stork*, An. Med. I. 132. *Hulme* on the puerperal fever.

Sp. III. *Inflammation of the Peritonæum* ſtretched over the *Meſentery.*

Meſenteritis, *Vog.* 60.
Enteritis meſenterica, *Sauv.* ſp. 4.

Genus XV. GASTRITIS.

Inflammation of the Stomach.

A. *Gaſtritis Phlegmonodæa*, or the *genuine Gaſtritis.*

Gaſtritis legitima, *Sauv.* ſp. 1. *Eller.* de cogn. et cur. morb. ſect. xii. *Haller.* obſ. 14. hiſt. 3. *Lieut.* Hiſt. anat. Med. lib. i. 74.
Gaſtritis eryſipelatoſa, *Sauv.* ſp. 4.
Cardialgia inflammatoria, *Sauv.* ſp. 13. *Tralles*, de opio ſect. ii. p. 23.

Theſe diſeaſes Dr. Cullen has thought proper to conſider all under the general head of Gaſtritis, as there are no certain ſigns by which they can be diſtinguiſhed from each other, and the method of cure muſt be the ſame in all.

1. *Deſcription.*] The inflammation of the ſtomach is attended with great heat and pain in the epigaſtric region, extreme anxiety, an almoſt continual and painful hiccough, with a moſt painful vo-

miting of every thing taken into the ſtomach. Sometimes a temporary madneſs enſues; and there is an inſtance in the Edinburgh Medical Eſſays of the diſorder being attended with an hydrophobia. The pulſe is generally more ſunk than in other inflammations, and the fever inclines to the nature of a typhus. The diſorder is commonly of the remitting kind, and during the remiſſions the pulſe frequently intermits. During the height of the diſeaſe, a mortal phrenitis frequently ſupervenes. The diſeaſe terminates on the fourth, ſeventh, ninth day, or from the eleventh to the fifteenth; and is more apt to end in a gangrene than pneumonic inflammation, and more frequently in a ſcirrhus than in an abſceſs.

2. *Cauſes*, &c.] The inflammation of the ſtomach may ariſe from any acrid ſubſtance taken into it; from a vehement paſſion; too large draughts of cold liquor, eſpecially when the perſon is very hot; from a ſurfeit; a ſtoppage of perſpiration; repulſion of the gout; inflammations of the neighbouring viſcera; or from external injuries, ſuch as wounds, contuſions, &c.—It affects chiefly thoſe of a plethoric habit and hot bilious conſtitution.

3. *Prognoſis.*] This diſeaſe is always very dangerous, and the prognoſis doubtful, which alſo muſt be in proportion to the ſeverity of the ſymptoms. A ceſſation of pain, coldneſs about the præcordia, great debility with a languid and intermitting pulſe, with an abatement of the hiccough, denote a gangrene and ſpeedy death. From the ſenſibility of the ſtomach alſo, and its great connection with the reſt of the ſyſtem, it muſt be obvious, that an inflammation of it, by whatever cauſes produced, may be attended with fatal conſequences; particularly, by the great debility it produces, it may prove ſuddenly fatal, without running through the uſual courſe of inflammation.—Its tendency to admit of reſolution may be known by its having ariſen from no violent cauſe, by the moderate ſtate of the ſymptoms, and by a gradual remiſſion of theſe ſymptoms in the courſe of the firſt, or at moſt of the ſecond week of the diſeaſe. The tendency to gangrene may be ſuſpected from the ſymptoms continuing with unremitting violence, notwithſtanding the uſe of proper remedies; and a gangrene already begun may be known by the ſymptoms above mentioned, particularly great debility and ſudden ceſſation of pain. The tendency to ſuppuration may be known by the ſymptoms continuing but in a moderate degree for more than one or two weeks, and by a conſiderable remiſſion of the pain while a ſenſe of weight and anxiety ſtill remain. When an abſceſs has been formed, the frequency of the pulſe firſt abated: but ſoon after it increaſed, with frequent cold ſhivering, and an exacerbation in the afternoon and evening; followed by night-ſweats, and other ſymptoms of hectic fever. Theſe at length prove fatal, unleſs the abſceſs open into the cavity of the ſtomach, the pus be evacuated by vomiting, and the ulcer ſoon heal; events which ſeldom occur.

4. *Cure.*] It appears from diſſections, that the ſtomach may very often be inflamed, and the characteriſtic marks of it have not appeared; and therefore we are often expoſed to much uncertainty in the cure. But when we have ſufficient evidence that a ſtate of active inflammation has taken place in the ſtomach, the principal object to be aimed at is to obtain a reſolution. Before, however, this can be accomplished, it will often be neceſſary to employ meaſures with the view of obviating urgent ſymptoms. When the ſymptoms appear in the manner above deſcribed, the cure is to be attempted by *large and repeated* bleedings employed *early* in the diſeaſe; and from theſe we are not to be deterred by the weakneſs of the puſſe, for it will commonly become fuller and ſofter after the operation. A very large bliſter ought alſo to be applied to the region of the ſtomach; and the cure will be aſſiſted by fomentations of the whole abdomen, and by frequent and copious emollient and laxative clyſters. Vide Form. (No. 34. and 89.) or the following from the Pharmacopœias of St. George's and Guy's hoſpitals:

(No. 105.) ℞ Decocti communis pro clyſtere ℥ix.
Mellis ℥iij.

(No. 106.) ℞ Seminum lini integrorum ℥j.
Aquæ fonti ℔j.
Coque per horam quadrantem et cola liquorem pro enemate.

(No. 107.) ℞ Decocti pro enemate ℥x.
Olei olivæ ℥ij.
Mucilag. arabic. gummi ℥j.
Tere oleum cum mucilagine donec in miſturam perfectam coeant; tum ſenſim adde decoctum ut fiat enema.

Interdum addere liceat magneſiæ vitriolatæ ℥j.

The irritability of the ſtomach in this diſeaſe will admit of no medicines being thrown into it; and if any can be ſuppoſed neceſſary, they muſt be exhibited in clyſters. Diluting drinks may be tried; but they muſt be of the very mildeſt kind, and given in very ſmall quantities at a time. Opiates, in whatever manner exhibited, cannot be retained in the ſtomach during the firſt days of the diſeaſe; but when the violence of the diſeaſe ſhall have abated, and when the pain and vomiting recur at intervals only, opiates, given in clyſters, may frequently be employed with advantage; and after bleeding and bliſters, no remedy is more effectual either in allaying the pain or vomiting. The following opiate clyſters are employed at Guy's, St. Thomas's, and St. Bartholomew's, hoſpitals:

(No. 108.) ℞ Decocti hordei ℥viij.
Tincturæ opii ℥j ad ℥ij.
Miſce fiat Enema.

(No. 109.) ℞. Enematis emollientis ℥iv.
Tincturæ opii gutt. xl.
Miſce fiat enema anodynum.

(No. 110.) ℞. Olei olivæ ℥iv.
Tincturæ opii gutt. xl.
Miſce fiat enema.

Or the following, from the Pharmacopœia Chirurgica:

(No. 111.) ℞. Mucilaginis amyli lib. ſs.
Tincturæ opii drach. j.
Miſce fiat enema.

As ſoon as the ſtomach will retain medicine, laxative, gentle refrigerant cathartics, taken by the mouth, ſuch as the ſoda phoſphorata, ſoda tartariſata, or the like, are productive of great benefit. A tendency to gangrene in this diſeaſe is to be obviated only by the means juſt now mentioned; and when it does actually ſupervene, it admits of no remedy. A tendency to ſuppuration is to be obviated by the ſame means employed early in the diſeaſe. After a certain period it cannot be prevented by any means whatever; and, when actually begun, muſt be left to nature; the only thing that can be done by art being to avoid all irritation.

B. *Gaſtritis Eryſipelatoſa*, or the *Eryſipelatous Gaſtritis*.

1. *Deſcription.*] This ſpecies of inflammation takes place in the ſtomach much more frequently than the former. From diſſections it appears that the ſtomach has been often affected with inflammation, when neither pain nor fever had given any notice of it; and ſuch is juſtly looked upon to have been of the eryſipelatous kind. This kind of inflammation alſo is eſpecially to be expected from acrimony of any kind applied to the ſtomach; and would certainly occur much more frequently, were not the interior ſurface of this organ commonly defended by mucus exuding in large quantity from the numerous follicles placed immediately under the villous coat. On many occaſions, however, the exudation of mucus is prevented, or the liquid poured out is of a leſs viſcid kind, ſo as to be leſs fitted to defend the ſubjacent nerves; and it is in ſuch caſes that acrid matters may readily produce an eryſipelatous affection of the ſtomach.

In many caſes, however, this kind of inflammation cannot be diſcovered, as it takes place without pain, pyrexia, or vomiting: but in ſome caſes it may; namely, when it ſpreads into the œſophagus, and appears on the pharynx and on the whole internal ſurface of the mouth. When therefore any eryſipelatous inflammation affects the mouth and fauces, and there ſhall be at the ſame

time in the ſtomach an unuſual ſenſibility to all acrids, and alſo a frequent vomiting, there can be little doubt of the ſtomach's being affected in the ſame manner. Even when no inflammation appears in the fauces, if ſome degree of pain be felt in the ſtomach, if there be a want of appetite, an anxiety and frequent vomiting, an unuſual ſenſibility with regard to acrids, ſome thirſt, and frequency of pulſe, there will then be room to ſuſpect an inflammation in the ſtomach; and ſuch ſymptoms, after ſome time, have been known to diſcover their cauſe by the inflammation riſing to the fauces or mouth. Inflammation of this kind is often diſpoſed to paſs from one place to another on the ſame ſurface, and, in doing ſo, to leave the place it had at firſt occupied. Such an inflammation has been known to ſpread ſucceſſively along the whole tract of the alimentary canal; occaſioning, when in the inteſtines, diarrhœa, and in the ſtomach vomitings; the diarrhœa ceaſing when the vomitings came on, and the vomitings on the coming on of the diarrhœa.

2. *Cauſes*, &c.] An eryſipelatous inflammation may ariſe from acrid matters taken into the ſtomach; or from ſome internal cauſes not yet well known. It frequently occurs in putrid diſeaſes, and in thoſe recovering from fevers.

3. *Cure.*] When the diſeaſe is occaſioned by acrid matters taken internally, and theſe may be ſuppoſed ſtill preſent in the ſtomach, they are to be waſhed out by drinking a large quantity of warm and mild liquids, and exciting vomiting. At the ſame time, if the nature of the acrimony and its proper corrector be known, this ſhould be thrown in; as in the caſe of mineral poiſons, which an alkali will decompoſe: or if a ſpecific corrector be not known, ſome general demulcents ſhould be employed, ſuch as *lac amygdalæ*, or the following from the Pharmacopœias of Guy's and St. Bartholomew's hoſpitals:

(No. 112.) ℞ Decocti hordei lib. ij.
Arabici gummi in pulv. trit. ʒj. Coque paululum ut ſolvatur gummi.

(No. 113.) ℞ Decocti hordei lib. ij.
Cryſtallorum tartari in pulv. trit. ℥iv.
Sacchari purificati ʒj. Miſce.

Or the following from the formulæ of Dr. Nankevel:

(No. 114.) ℞ Amygd. xv.
Olei amygdal. ʒj.
Gum. arab. in pulv. trit.
Sacchari alb. ſing. ʒij.
Aquæ cinnamomi ʒviij.
Miſce fiat miſtura. Detur cochl. duo pro re nata.

Theſe meaſures, however, are more ſuited to prevent than to cure inflammation after it has taken place. When this laſt may be ſuppoſed to have happened, if it be attended with a ſenſe of

heat, with pain and pyrexia, according to the degree of these symptoms, the measures proposed for the cure of the other kind are to be more or less employed. When an erysipelatous inflammation of the stomach has arisen from internal causes, if pain and pyrexia occur, bleeding may be employed in persons not otherwise weakened; but in case of its occurring in putrid diseases, or where the patients are already debilitated, bleeding is inadmissible; all that can be done being to avoid irritation, and only throwing into the stomach what quantity of acids and acescent aliments it shall be found able to bear, or the fermenting draught (No. 45.) In some conditions of the body in which this disease is apt to occur, cold infusions of the Peruvian bark and colombo may seem to be indicated; but an erysipelatous state of the stomach will seldom allow them to be used. Where it is advisable to make the attempt, the following may be tried:

(No. 115.) ℞ Cinchonæ in pulv. trit. ℥j.
Rad. colomb. in pulv. trit. ℥fs.
Zingiberis in pulv. trit. ʒfs.
Aquæ fontis lib. ij. Infunde per hor. xxiv. Capiat cyath. parvul. bis terve indies.

As *ulceration* is a consequence of antecedent inflammation, either phlegmonous or erysipelatous, it cannot be amiss to insert here the following case of ulceration in the stomach, published in the Medical and Physical Journal by Mr. Moore, of London.

"A stout middle-aged woman had long complained of considerable pain in her stomach, which sometimes darted through to her back; she likewise had occasional fits of vomiting in the morning. These symptoms were attributed by her friends to drinking, to which she was much addicted; the event, however, makes it more probable, that her sufferings were the cause of her drinking.

"She passed the morning of the 29th of March last at an alehouse; and at one o'clock in the afternoon, she was attacked suddenly with such a violent pain all over her belly as to be forced to scream aloud.

"Mr. Patten was immediately called to her assistance, who employed such remedies as he judged proper. He informed me, that when he saw her, her pulse was quick and weak; and some degree of coldness had taken place on the extremities.

"The sufferings of the patient abated with her strength; she sunk rapidly, and expired thirteen hours after she was attacked with the pain.

"I opened the body thirty hours after her death; and although the corpse lay in a room without a fire, yet the abdomen was distended with gas, and there was some emphysema in the cellular membrane, the effect of beginning putrefaction.—This evinces that gin and porter, though drunk plentifully during life, have little power in retarding putrefaction after death.

"The first preternatural circumstance which occurred in opening the abdomen, was the effusion of about two quarts of a whitish fluid. It was discovered, that the source of this was a circular orifice in the stomach, about a quarter of an inch in diameter; and it appeared that the white fluid was gruel and the other drinks which the patient had swallowed previous to her disease, mingled with the secretions of the stomach. Upon examining the internal surface of this organ, two ulcers were discovered, each about an inch in length, of an oval form, and apparently spreading towards each other. In the centre of one of the ulcers was the small hole formerly mentioned; its edge was thin and smooth: the substance of the stomach, near the ulcers, was thickened, and in some degree inflamed; the peritoneum was slightly inflamed, and the body had no other diseased appearance.

"The disease which destroyed this poor woman, though uncommon, has been mentioned by authors. Bonetus, Morgagni, as well as others, have recorded similar cases; and the various appearances of ulcers in the stomach are accurately described in Dr. Baillie's Morbid Anatomy.

"This is, probably, a more frequent cause of sudden death than is generally imagined, for it is the second instance I have met with.—The first was a very young girl, whose only complaint was occasionally vomiting her food. This gave her so little uneasiness, that she tried as much as possible to conceal it, lest she should be advised to swallow medicines. One night she was seized with what was believed to be a very violent fit of the cholic. Opiates did not diminish the pain; in a few hours cold sweats broke out, her pain left her, and she died in sixteen hours from the beginning of the attack.

"Two circumstances occurred in both these cases, different, I think, from what was naturally to be expected.

"The *first* is, the sudden attack of excruciating pain, which was felt all over the belly. I know no alteration in the diseased parts which could have occurred to produce this effect, except the opening in the peritoneal coat of the stomach, and the effusion of its contents into the general cavity of the abdomen.

"The gastric juice gives no sensation to the stomach itself; but it is, perhaps, capable of exciting all the torture these patients endured, when applied to the peritoneum, a membrane not adapted by nature to sustain its application.

"The *second* circumstance is the very sudden death of the patients;—To what is this to be attributed? The most ignorant medical man might easily have foretold, that these patients could not recover after a hole was formed in their stomachs; but I doubt if the wisest could have propheſied that this event would put so speedy a termination to life. The symptoms of this malady are few and

equivocal. But if it could be known, that one had an ulcer in the ſtomach previous to its penetrating into the abdomen, a regimen and treatment might be preſcribed, which, poſſibly, would contribute to heal it. For it is certain, that ulcers in this organ have healed; poiſons have been ſwallowed, which muſt have eroded portions of the internal ſurface of the ſtomach, and wounds have been received into it without proving mortal.

"The chance of curing this diſeaſe being, however, very ſmall, let us turn our attention towards the cauſes and the prevention of ſo dangerous a diſtemper. We muſt here, as in other parts of the obſcure ſcience of medicine, have recourſe to analogy and conjectures. Ulcers upon the external parts of the body, are produced either by diſeaſes or by accidents. The latter is the more common cauſe; and this may likewiſe be the caſe with ulcers in the ſtomach.

"Many perſons are extremely raſh in ſwallowing fiſh bones, fruit ſtones, and other hard and ſharp ſubſtances. Women frequently ſwallow pins without fear, ſo that it ſeems to me very difficult to give a good reaſon why ulcers in the ſtomach occur ſo ſeldom as they do. It is to be wiſhed, that the danger of ſuch practices was more generally inculcated, that a real benefit might reſult from theſe diſſections; for it is known to all ſurgeons, that a very ſlight puncture in the ſkin ſometimes degenerates into an ill-conditioned ulcer.

"The ſtomach is not invulnerable, and it is ſuſceptible of ulceration as well as the ſkin. The contact of the gaſtric juice, and the variety of foods which are ſwallowed together, with the action of the ſtomach, are not very favourable circumſtances for healing an injury in this part; and ſhould any of theſe circumſtances, or ſome malady in the conſtitution, excite ulceration, a healing diſpoſition may never take place; and, if the ulcer ſpreads and pierces the coats of the ſtomach, a ſudden and painful death is the inevitable conſequence."

Genus XVI. ENTERITIS.

Inflammation of the *Inteſtines.*

Enteritis, *Sauv.* gen. 105. *Lin.* 29. *Vog.* 57. *Sag.* gen. 307.
Inteſtinorum inflammatio, *Boerh.* 959.
Febris inteſtinorum inflammatoria ex meſenterio, *Hoffm.* II. 170.

Sp. I. *Enteritis Phlegmonodæa*, or the *Acute Enteritis*.

Enteritis iliaca, *Sauv.* sp. 1.
Enteritis colica, *Sauv.* sp. *Boerh.* 963.

This disease shews itself by a fixed pain in the abdomen, attended with fever, vomiting, and costiveness. The pain is often felt in different parts of the abdomen, but more frequently spreads over the whole, and is particularly violent about the navel.

Inflammations of the intestines may arise from the same causes as those of the stomach; though commonly the former will more readily occur from cold applied to the lower extremities, or to the belly itself. It is also found supervening on the spasmodic colic, incarcerated hernia, and volvulus.

Inflammations of the intestines have the same terminations with those of the stomach, and the prognosis in both cases is much the same.

The cure of enteritis is in general the same with that of gastritis: but in this disease there is commonly more opportunity for the introduction of liquids, of acids, acescent and other cooling remedies, and even of laxatives; but as a vomiting frequently attends the enteritis, care must be taken not to excite that vomiting by the quantity or quality of any thing thrown into the stomach. With regard to the suppuration and gangrene of the intestines following the enteritis, the observations made respecting these terminations of gastritis are equally applicable in this disease.

To this we shall annex the very excellent account given of this disease and its treatment, by Dr. Fordyce.

An *inflammation* of the *exterior coats* of the *Intestines* (of which the symptoms and manner of treatment are here laid down) differs greatly from that of the interior, villous, or mucous membrane; this last being attended with *dysentery*, or *aphthæ*.

It is brought on by external cold, fever, indurated *fæces*, heavy or hard bodies lying on the intestines, introsusceptions, adhesive stimulants, spasmodic contraction of the intestines, *hernias*, and wounds.

The symptoms are a pain in the belly, occupying different parts according to the intestine affected; but fixed to the place in which it arose at first. It is extremely acute, except when the disease arises from a wound, and then it is sometimes hardly sensible; it is generally equable, sometimes however increasing by fits, and sometimes diminishing a little. For the most part the whole belly is affected, at the same time, with spasmodic pains and flatulency. The pulse becomes small, hard, frequent, quick, and often at last irregular and intermittent. Coldness of the extremities, together with a sudden and great prostration of strength,

take place. The muſcular fibres of the inflamed part contract, ſo that nothing can paſs through; and ſometimes the *ſphincter ani*, in ſuch a manner that a ſmall pipe can with difficulty be introduced into the *rectum*. Flatulencies in the ſtomach, ſickneſs, violent retchings, and vomiting, are frequently produced. The tongue is dry, with great thirſt, and the urine tranſparent, and ſometimes pale, in ſmall quantity, and diſcharged with difficulty. The breathing is quick, the patient bending forward and compreſſing his belly, the abdominal muſcles being often ſpaſmodically contracted; and from the irritation the patient is cut off, ſometimes with delirium and convulſions.

The inflammation frequently terminates in gangrene and mortification, in which caſe the pain goes off, and the patient appears to himſelf, for a little, relieved; but the pulſe continues frequent, ſmall, and often irregular, and the extremities cold, and he is cut off.

If it be left to itſelf, this diſeaſe kills ſometimes in ten or twelve hours, and almoſt always before the end of the third day; ſo that there is ſeldom any ſuppuration. But if the inteſtines ſhould ſuppurate, the pain diminiſhes, and is converted rather into a ſenſe of diſtenſion; irregular cold fits, with the other ſymptoms of internal ſuppuration, ariſe; and the contraction of the muſcular fibres of the inteſtines, the great frequency of the pulſe, and other ſymptoms, go off.

There is a greater chance of a ſuppuration taking place in the colon than in the *duodenum*, *jejunum*, or *ilium*.

The abſceſs may break either into the cavity of the *abdomen*, or into the inteſtinal canal. In the firſt caſe it is generally fatal, producing a hectic fever; in the ſecond, the *pus* is evacuated by the *anus*, ſometimes at firſt pure, afterwards mixed with the *fæces*, gradually diminiſhing if the ulcer heals, and the patient is reſtored; or a conſiderable quantity of matter continues to be diſcharged, a hectic fever is produced, and he ſinks.

At the beginning of the diſeaſe, after the pain has continued for a few hours, ſometimes a great ſecretion takes place in the inteſtines; the villous membrane is alſo affected with inflammation, and it is converted into a dyſentery: on the other hand, when in an inflammatory dyſentery the ſecretion is imprudently checked by aſtringents, this kind of inflammation often ariſes.

It ſhould be diſtinguiſhed from the ſtone in the kidneys or ureters, from inflammation of the kidneys, and other abdominal *viſcera*; from the pleuriſy, and other inflammations of the *thorax*; and particularly from ſpaſmodic pains in the inteſtines, and obſtruction of the paſſage through them where there is no inflammation.

It is to be cured by the immediate application of the moſt powerful means of *reſolution*; we are therefore to bleed to the

quantity of twelve or ſixteen ounces, notwithſtanding the ſmallneſs of the pulſe, and ſeeming weakneſs: for the pulſe becomes fuller, and the proſtration of ſtrength goes off when the inflammation is diminiſhed; as, on the other hand, they are increaſed by ſtimulants: the bleeding is to be repeated at ſhort intervals till the pulſe becomes ſoft.

Purgatives are contra-indicated by the contraction of the inflamed part; and when they have been given, and have not purged, they have often evidently increaſed the pain, and other ſymptoms: but evacuations from the inteſtines, by means of clyſters, are made with advantage, and (No. 34.) may be thrown in every two or three hours till a ſtool is procured.

Relaxants have not ſo frequently been exhibited internally as in other inflammations: nevertheleſs, when uſed, they are of great ſervice. (Vid. No. 90, and 27.)

The circulation is to be brought to the ſurface of the body by the warm bath, or fomentations applied to the belly: but great care is to be taken leſt cold from the air or moiſture in coming out of the bath, or changing the fomentations, ſhould do more miſchief than the remedy does good: theſe are alſo uſeful when the *anus* is much contracted, ſo that clyſters cannot be given.

Narcotic and ſedative fomentations are alſo uſeful:

(No. 116.) ℞ Flor. chamæm. manip. ij.
Foliorum rutæ vel matricar. manip. j.
Capit. papav. alb. (ſem. dempt.) ℥i.
Rad. altheæ recent. ℥j.
Optime contundantur et coquantur in aquæ fontis q. ſ. per minut. v. decoctum utatur pro fotu, et herb. cocti pro cataplaſmate.

(No. 117.) ℞ Capit. papav. alb. (ſemin. dempt.) ℥iv.
Coque ex aq. font. lib. iij. per decem min. dein adde,
Sp. vini rect. ℥viij. Exprimendo cola pro uſu.

Some degree of inflammation of the ſkin of the belly has been raiſed by cupping-glaſſes with benefit: but bliſters have not been commonly employed.

If theſe means ſhould fail of ſucceſs, opiates ſometimes cure, by taking off the contraction; eſpecially when joined with relaxants.

(No. 118.) ℞ Aquæ menthæ ſativæ ℥iſs.
Syr. papaveris alb. ʒij. ad vj.
Antimon. tartaris. gr. ½ ad ſs.
Miſce fiat Hauſtus.

Dr. Saunders, as a mild purgative in this diſeaſe, recommends,

(No. 119.) ℞ Kali tartarisat.
Natr. Tartarisat.
Natr. Vitriolat.
Sodæ phosphorat. (Ph. Edin.)
Magnes. vitriolatæ.
} horum cujus volueris ʒij.
Aquæ menthæ piperit. ʒvj. solve.
Capiat cochlearia tria alternis horis donec rite solvatur alvus.

The food, both during the inflammation and after it is cured, should be farinaceous decoctions or moist farinaceous porridge or puddings.

Sp. II. *Enteritis Erysipelatosa*, or *Erysipelatous Enteritis.*

Concerning this nothing farther need be said, than what hath been already delivered concerning the gastritis.

Genus XVII. HEPATITIS.

Inflammation of the LIVER.

Hepatitis *Sauv.* gen. 113. *Lin.* 35. *Vog.* 58. *Sag.* gen. 312. *Boerh.* 914. *Hoffm.* II. 14. *Junck.* 66.

1. *Description.*] The inflammation of the liver is thought to be of two kinds, acute and chronic; but the latter very often does not discover itself except by an abscess found in the liver after death, and which is supposed to have been occasioned by some degree of inflammation; for this reason the chronic inflammation often escapes observation, and we shall here only treat of the acute hepatitis.

The acute hepatitis is attended with considerable fever; a frequent, strong, and hard pulse; high-coloured urine; an acute pain in the right hypochondrium, increased by pressing upon the part. The pain is very often in such a part of the side as to make it appear like a pleurisy; and frequently, like that, is increased on inspiration. The disease is also commonly attended with a cough, which is generally dry, but sometimes moist; and when the pain thus resembles a pleurisy, the patient cannot lie easily except upon the side affected. The pain is frequently extended to the clavicle, and to the top of the shoulder; and is attended sometimes with hiccough, and sometimes with vomiting. Some have added jaundice, or a yellowness of the eyes, to the symptoms of this complaint; but experience shews that it has often occurred without any such symptom.

When hepatitis is of the chronic kind, depending more on an

accumulation and effusion in the liver, than on an increased action of its small vessels, the patient complains rather of a sense of weight than of pain; and the fever is by no means either acute or constant: but it often returns in paroxysms somewhat resembling the attacks of an intermittent. This disease is very slow in its progress, frequently continuing for many months, and at last terminating in a very considerable suppuration. In most cases, however, it may be discovered by careful examination of the region of the liver externally. By this means, a considerable enlargement of that viscus may in general be found.

An *Inflammation of the* Membranes *of the Liver* may arise from the same causes as inflammation of the substance, but the symptoms differ as follows; the pain is more acute, it is attended with general inflammation, resembles more a pleurisy of the right side when the convex part is affected. It is to be treated nearly in the same manner as that disease.

2. *Causes*, &c.] The remote causes of hepatitis are not always to be discerned, and many have been assigned on a very uncertain foundation. It has been supposed that the disease may be an affection either of the extremities of the hepatic artery, or those of the vena portarum; and the supposition is by no means improbable. The opinion, however, most commonly adopted is, that the acute hepatitis is an affection of the external membrane of the liver, and the chronic kind an affection of the parenchyma of that viscus. The acute disease may be seated either on the convex or concave surface of the liver; and in the former case a more pungent pain and hiccough may be produced, and the respiration is more considerably affected. In the latter there occurs less pain; and a vomiting is produced, commonly by some inflammation communicated to the stomach. The inflammation on the concave surface of the liver may be readily communicated to the gall-bladder and biliary ducts: and this, perhaps, is the only case of idiopathic hepatitis attended with jaundice.

3. *Prognosis.*] The inflammation of the liver, like others, may end by resolution, suppuration, or gangrene; and the tendency to the one or to the other of those events may be known from what has been already mentioned concerning the prognosis in gastritis. The resolution of hepatitis is often the consequence of, or is attended with, evacuations of different kinds. A hæmorrhage, sometimes from the nose, and sometimes from the hæmorrhoidal vessels, gives a solution of the disease. Sometimes the same thing is accomplished by a bilious diarrhœa; and sometimes the resolution is attended with sweating, and an evacuation of urine depositing a copious sediment. Sometimes it may be cured by an erysipelas appearing in some external part. When the disease terminates in suppuration, the pus collected may be discharged by the biliary ducts: or, if the suppurated part does not adhere any-

where clofely to the neighbouring parts, it may be difcharged into the cavity of the abdomen: but if, during the firft ftate of inflammation, the affected part of the liver fhall have formed a clofe adhefion to fome of the neighbouring parts, the difcharge after fuppuration may be various, according to the different feat of the abfcefs. When feated on the convex part of the liver, if the adhefion be to the peritonæum lining the common teguments, the pus may make its way through thefe, and be difcharged outwardly: or if the adhefion fhall have been to the diaphragm, the pus may penetrate through this, and into the cavity of the lungs; from whence it may be difcharged by coughing. When the abfcefs is feated on the concave part of the liver, in confequence of adhefions, the pus may be difcharged into the ftomach or inteftines; and into thefe laft, either directly, or by the intervention of the biliary ducts. Upon a confideration of all thefe different circumftances therefore, together with the general principles of inflammation, muft the prognofis of this difeafe be eftablifhed.

4. *Cure.*] The cure of hepatitis is performed by bleeding, blifters, relaxants, &c. as in other internal inflammations; but the fymptoms at the beginning not alarming the patient, it is often too late before the remedies are employed; and from the flightnefs of the general inflammation, evacuations having lefs effect, this difeafe frequently terminates in fuppuration, which, however, is to be avoided, if poffible.

For this purpofe we are to bleed to twelve or fourteen ounces any time before the fifth day; efpecially if there be general inflammation: and the bleeding is to be repeated, if the general inflammation continues, or the patient is relieved but not cured.

If there be a free paffage for the bile into the *duodenum*, purgatives are alfo to be given. (Vide No. 58.)

In other cafes, relaxants (vide No. 90, 27.), and blifters applied to the part, are principally to be depended on, and in all are ufeful.

If it be too late for the application of thefe remedies, or if they fail, and a fuppuration takes place; as foon as we know this from the fymptoms, (No. 47.) is to be taken four or five times a-day, increafing the quantity of the bark, fo that the patient fhall take from three drachms to half an ounce every twenty-four hours.

If the abfcefs points externally, we are to open it as foon as poffible; provided it appears, from the immobility of the fwelling, that the liver adheres to the *peritonæum*; and the dofe of the bark is to be increafed to ʒi. ad ʒ j. every twenty-four hours, till a good fuppuration and granulation come on. The medicine is to be ufed in the fame manner, if from the purulent or ichorous ftools we judge that the abfcefs has broken into the *duodenum*.

Mercury has been given with the fame intention, in as great

quantity as could be taken without salivating the patient; but the bark appears to be far preferable if the case be recent.

When an abscess breaks into the cavity of the *abdomen*, the same means may be used, but the disease is commonly fatal.

The cure of hepatitis in warm climates, where the disease is much more common than it is in Britain, is chiefly trusted to mercury. Not only in cases of the chronic kind, but in acute hepatitis also, after an attempt has been made to alleviate the urgent symptoms by bleeding and blistering, recourse is immediately had to this powerful mineral. It is employed by different practitioners, and in different cases, under various forms. Some are very fond of the use of calomel. But the preference is in general given, and perhaps with justice, to friction with mercurial ointment over the region of the liver. But under whatever form it may be employed, it is necessary that it should be introduced to such an extent as to keep the patient on the verge of salivation for some length of time, the duration being regulated by the circumstances of the case.

From the liberal use of mercury, there can be no doubt that a successful resolution has been obtained in many cases, which would otherwise have infallibly terminated in suppuration. But notwithstanding the most careful employment of it in some cases, suppuration will ensue; and then it is very doubtful whether any benefit will be derived from the continuance of it. But when a suppuration has been formed, and the abscess points outwardly, the part must be opened, the pus evacuated, and the ulcer healed according to the ordinary methods in use for healing abscesses and ulcers in other parts.

We cannot better illustrate the practice of treating this disease by mercurials, than by inserting the cases published in the Edinburgh Medical Commentaries, by the late Dr. Houlston, physician to the Liverpool Infirmary. Treating on the effects of mercurials in the cure of obstinate dysenteries, and other consequences of hepatitis, he expresses himself to this effect:

"It would seem, at first sight, that no medicine could be less adapted to the cure of a disease of this sort than mercury; and yet the following cases, which, having occurred in the Public Infirmary at Liverpool, were seen and known by numbers, will, I flatter myself, evince that the application of it, in certain circumstances, is founded in reason and justified by success.

Case 1.—"William Brown, a seaman, who had remained above two years on the coast of Africa, was admitted an outpatient of the infirmary May 23, 1776, for an affection of the liver, attended with a dysentery, which he had laboured under for two years past, and for which he had taken a variety of medicines without obtaining any benefit. He was a stout made man, about forty-eight years of age, but had a very sallow complexion,

and a prominent belly, the region of the liver being enlarged, and, on preſſure, painful. Theſe, together with the flux, he himſelf imputed to his having been poiſoned by the negroes, though he had no idea when or how. On enquiry, I found he had had an intermittent fever of long duration in the hot climates, and from that period his health had declined. His preſent complaint began on the coaſt with coſtiveneſs, attended with loſs of appetite, vomiting, violent pain of the belly, ſhivering, and fever. When, after five days, a ſtool was procured, he ſeemed ſomewhat relieved at firſt. A looſeneſs however ſucceeded, with griping pain, teneſmus, ſlimy and bloody ſtools. From this time his appetite continued tolerably good.

" The moſt probable and uſual means of putting a ſtop to the complaint were ordered, and perſevered in near eight months; but finding that during all that time the diſeaſe was little relieved, and that only ſometimes for a ſhort ſpace, recurring again with its uſual violence very ſoon, I began to conſider, that *it might very probably take its riſe from a diſeaſed liver*, and a conſequent irregular ſecretion of bile. If that were the caſe, it was not likely that the flux ſhould be got the better of, unleſs the affection of the liver, on which it depended, was firſt removed. With this view, having admitted him an in-patient January 16, 1777, I directed the mercurial inunctions to be gradually applied; and as no increaſe of the dyſenteric ſymptoms followed their uſe, they were continued (a fortnight) till the mouth was affected, and a moderate ſalivation came on. When this took place, his ſtools became leſs frequent, more regular, natural, and free from blood. By the time it had ceaſed, he thought himſelf freed from all his complaints, and at his own requeſt was diſcharged, February 27, though I told him then, I was apprehenſive that his diſorder would return, and a repetition of the courſe be requiſite.

" A fortnight after (March 13), he applied again for admiſſion: his appetite was impaired, his gripings violent, his ſtools very frequent and bloody; his belly, about the region of the liver, was ſwelled, hard, and painful. After premiſing a few gentle evacuants, the inunctions were repeated. For ſome days he was no better; and being rather feveriſh, the mercury was omitted for a week, and then reſumed. April 4, ptyaliſm was produced: he was then very eaſy in his belly, his looſeneſs was almoſt ſtopped; and he ſaid himſelf he was much better than ever he had been ſince the beginning of his illneſs. The mercurials, after a little reſpite, were continued ſome time longer; and on May 8, he was diſcharged perfectly well, and ſo remained."

Case 2.—" September 23, 1779. William Martin, an Iriſh mariner, twenty-eight years old, meagre, of a ſallow, bilious complexion, was admitted an in-patient of the infirmary, for a dyſentery of ſix years ſtanding. He had ſpent much of his life

in the warm climates: ſeven years ago he had lain nine months upon the coaſt of Guinea, and a little before that, had remained there two years at one time, during which reſidence he had had the flux. It began again in December, 1773, at Boſton; and had continued from that time, almoſt without intermiſſion, in ſpite of every attempt to cure it. For that end, he had been in an hoſpital in Charleſtown, South Carolina; and on his return to England, was ſix months in Guy's, and after that three months in St. Bartholomew's Hoſpital, London; from thence he went into that at Cork, and afterwards into thoſe of Gibraltar and Minorca, where he was diſcharged from the navy as unfit for the ſervice. In theſe he took decoctions of logwood, decoctum album, rhubarb, and a great number of other medicines; but found no benefit from any, except lapis calaminaris boiled in milk, and from the dry vomit *; both of which checked the purging, though but for a ſhort time, not more than twenty-four hours. He was forced to live almoſt wholly on milk. His ſtools were attended with much griping pain; they were bloody, but not always ſo. He was alſo troubled with the piles.

"As ſuch various means had been uſed under the direction of ſo many able practitioners, I thought it unneceſſary to attempt to ſucceed in his cure by the uſual remedies; and determined to try what mercurials would do. It is true he had no ſenſible enlargement of the belly; but I was induced to have recourſe to the inunctions, from recollecting the great benefit I had experienced from them in the preceding caſe, from the long duration of the diſeaſe, and the inefficacy of every remedy which had been adminiſtered. His complexion was very bilious, and had been ſo much ſo, long before I ſaw him, that he was ſuppoſed to have the jaundice; ſome had concluded that he was poiſoned on the coaſt; others, that he was in a conſumption, as his fleſh and ſtrength declined much, though he had no cough, nor any pain in the breaſt.

"I ordered him then to rub in half a dram of ſtrong mercurial ointment, equal parts, every other evening; which he continued to do till October 9, when ptyaliſm was produced, which laſted ten or twelve days very copiouſly. During this time he took only the decoctum album and Caſtile ſoap. In three days after the ſpitting began, his flux ſtopped, his ſtools were natural, not more than one or two in twenty-four hours, and without any griping.

* The *dry vomit* (recommended by the late Dr. Maryatt, of Briſtol) is compoſed of antim. tart. and cupr. vitriol aa. p. æq. Five grains is given as a doſe upon an empty ſtomach, and without any liquid to aſſiſt the vomiting. It generally operates eaſily, and evacuates much bile, without relaxing the ſtomach. After its operation, a ſpoonful of brandy is given; and if that comes up, a ſecond, to remove the inclination to vomit.

He had, however, a very acute headach, which gradually went off; and by the end of the month he could eat broths, and other things, which before this time used to render the complaint violent, without any inconvenience.

"Still the purging returned at times soon after, though not with the former violence; and he took the dry vomit, rhubarb, and lapis calaminaris, to little purpose. At his own request, therefore, he began again with the inunctions, November 25, which excited salivation in less than a fortnight, and seemed to have carried off the complaint; but as the stomach and intestines were greatly debilitated, I gave him, at different times, the sal martis, bark, and some astringents. Towards the end of January, 1780, he had a rheumatic attack, which he ascribed to cold from changing his room, but which yielded soon to the decoctum guiaci. The middle of February he was attacked with a slight tertian ague, to which he had been subject before, but which went off in a few days. In the beginning of March he was free from both, and signified a desire of going to sea.

"The account he then gave of himself was this. Of stools, he had two or three in twenty-four hours, easy and natural; sometimes more costive than he wished on account of his hemorrhoids. Perhaps, once in a fortnight, he had a purging which continued about twenty-four hours. His appetite was poor; but what he eat (in which he was not very cautious) sat easier upon his stomach, and agreed better with him, than it had used to do; and his health and strength were much better than at any time since his disorder began. I consented to his going a short voyage; and his intention is, if the looseness return, and further assistance be necessary (which it probably may), to apply again, and try the effect of another salivation."

Dr. Houlston observes that he never saw more of this man; but he has reason to believe he got well, having been seen long afterwards apparently in good health.

Case 3.—"Gaspard Peter Finch, a German, twenty-two years of age, having been a voyage to Jamaica, after staying there about half a year, came in a vessel to Liverpool, where he applied for admission into the infirmary, October 14, 1779, for a dysentery, which began during the passage, and had continued about three months. He was much emaciated, had a sallow, bilious complexion, but no apparent enlargement or increased sensibility of the viscera. I gave him the usual evacuant and astringent medicines, which he continued to take for three months, with but very little advantage, and that not permanent. Finding this to be the case, I proposed to him to try a mercurial course; to which he was persuaded by the last-mentioned patient. He began to rub in half a dram of the strongest ointment every night; and continued so to do for a month, when it was discontinued

on account of his having a tertian ague, of which he had an attack before, since his admission into the hospital. It yielded, as did the former, to an emetic before the cold fit, and an opiate in the beginning of the hot one. I suffered it, indeed, to go on for a few days, as thinking it might possibly be of some service. No salivation had taken place; but his stools were regular, without pain or blood, and not more than two in twenty-four hours. He left the infirmary at the end of February; and I met him a fortnight after, when he informed me he was perfectly well, and going to Barbadoes in a vessel from this port."

These are the only cases of which, as they appeared important, the author had noted the particulars; but he was assured by a very intelligent gentleman who then attended the hospital, that some others of the same nature, and treated in this method, succeeded equally well, the *dysentery* being evidently *symptomatic*.

"Indeed," continues the doctor, "I have found, in many instances, where, after a residence in the hot climates, the liver has been obstructed and enlarged by previous inflammation, that very great benefit has been obtained by the gradual and prudent use of mercurials, and that sometimes from much smaller quantities than one might expect. A case of this kind occurred some time since.

Case 4.—"A gentleman, who had spent some years in the West Indies, returned to England on account of his having long laboured under a bad state of health, which was not at all improved during the voyage home. He applied to me soon after his arrival; and as it appeared clearly that the liver was affected, I put him upon the mercurial inunctions. After he had used them a few times, he had occasion to go a journey of three or four days, and was desired to omit the mercury; which he did about a week before he sat out. By the time he came to the end of his journey, however, he found himself much better, and was very soon surprisingly recovered.

"We frequently meet here with persons returned from the coast of Africa, with pale, sallow, bilious complections, prominent bellies, loss of appetite and strength, swelled legs, and general ill health. They grow gradually worse, and die, at length, emaciated and dropsical. They suspect, and others conclude, without foundation, that they have had a slow poison given them privately by the negroes. But these evils, which are wrongly attributed to the natives, are only caused by *hepatitis*. Enquire of these poor objects, you will generally find that they have had a fever (an intermittent) or the flux in the torrid zone: examine them, and you will frequently perceive that the liver is enlarged and indurated. This is the true cause of their bad state of health; and the remedy for it, in the opinion of the ingenious Dr. Lind, Dr. Clark of Newcastle, and others, is to be looked

for in mercurials. I have repeatedly seen great good effects in such cases from a salivation; and where that has relieved but in part, a second, or even a third, being excited, has succeeded well."

The succeeding case, though only an affection of the liver from a long-continued intermittent, is still an instance of the good effects of mercury in cases where (whether primarily or secondarily is immaterial) that viscus is brought into a state of disease.

Case 5.—"The following is a case of accidental recovery in a poor Irishman whom I had taken into the infirmary, labouring under an ague of long continuance, anasarca, extreme debility, and emaciation. His complexion was very sallow, and his belly prominent; the effect, as appeared on examination, of enlarged and indurated viscera; a frequent consequence of agues amongst those who live in low marshy situations, to which they give the name of the ague-cake; and which, together with the subsequent ill health, is often wrongfully attributed to the use of the bark. I tried the above, and other means, for some time, without any permanent good effect. The ague indeed would stop for a while, and the patient seemed to acquire a little strength; but he soon relapsed. At length it happened that mercurial inunctions, directed for another patient, were, by mistake, given to him. He had used them only a few times, when, to my great surprise, I found him in a salivation. I was the less dissatisfied at the mistake, as I thought it probable he might thence receive essential benefit: and the event justified my opinion, for the man soon got quite well. An instance this, which might be adduced as a further proof of the good effects of mercurials in cases of hepatitis; though such was the degree of weakness of this patient, that however desirable a mercurial treatment might have appeared, few practitioners would have ventured to advise it for a man so extremely reduced: and though the event was favourable, it would scarcely be a sufficient justification for adopting so hazardous a practice in similar circumstances."

We shall add two other cases, which fell under Dr. Houlston's care in the Liverpool Infirmary, after the publication of his paper. These tend very forcibly to confirm the propriety of the mode of treatment therein recommended; and the latter of them particularly refers to the instance of accidental recovery by salivation just recited.

Case 6.—"Daniel Leonard was admitted an in-patient, August 25, 1785. He was a seaman, thirty-three years old; and had been attacked by the flux, followed by the ague, in the West Indies, six months before; and from that time had remained subject to frequent irregular attacks of both complaints.

"Though examination did not furnish any certain proofs of *enlarged* or *diseased viscera*, yet his general appearance confirming

me in the idea, I ſtrongly ſuſpected that to be the original cauſe of his ill health. In conſequence, I propoſed to him to undergo a mercurial courſe. The inunctions were ordered for him; and during the uſe of them, he ſeemed daily to grow better and ſtronger, inſomuch that, before his mouth was affected, he was, at his own deſire, diſcharged, freed from all his complaints, in leſs than a month.

Case 7.—"In this caſe, the enlargement of the liver was very evident indeed. George Jackſon, a ſeaman, twenty-ſix years of age, returned from the hot climates, applied for admiſſion into the infirmary October 27, 1785, having an irregular intermittent, which, though it frequently left him for a ſhort time, conſtantly returned, and had done ſo for ſeven months. The caſe was too clear to heſitate about; and having explained to him my intentions and expectations, I ordered him to rub in upon the belly a dram of the mercurial ointment (compoſed of equal parts of quickſilver and lard) every other night.

"He had only uſed it three times when a ſalivation commenced, ſo rapid and ſo violent, as to give me concern for having been, unintentionally, the cauſe of ſo much inconvenience to the man: but I comforted him, and myſelf too, with the hope that he would, by this means, be relieved at once from all his complaints; and this was ſo much confirmed by the event, that when the ſalivation had ſubſided, and the poor fellow's ſtrength was recruited, he left the infirmary, December 1, 1785, perfectly well."

The following conſequences of hepatitis are deſcribed by the late Mr. Juſtamond in the fourth edition of his works.

"A negro ſervant belonging to Dr. Mac Namara was admitted into the Weſtminſter hoſpital under my care. He had a large prominent tumor on the right ſide of the linea alba, and immediately under the margin of the cheſt. From the ſeat of the complaint, the ſymptoms attending, and from an obſcure fluctuation diſcerned in the tumor, I ſuſpected this to be an encyſted abſceſs of the liver, a diſeaſe often met with among negroes, and therefore reſolved upon opening it. I made an inciſion through the whole extent of the tumor, and after having divided the muſcles of the belly and the peritonæum, gave vent to a quantity of matter, which evidently appeared to be contained in a large cyſt, totally diſtinct from the cavity of the belly, as uſual in theſe caſes. The ſac ran ſo far back towards the ſpine, that it was not poſſible to empty it at once, and, indeed, the contents were ſo viſcid and tenacious, that it was only by repeated injections with barley water, continued for about three weeks, that the cyſt could be entirely evacuated. When this was done, and that the ſides of it were conſequently brought nearer together, one might plainly feel an enlargment and induration of the liver, extending through the

whole of its region. In little more than two months the wound was healed, except that there remained a fiſtulous opening which it was impoſſible for me to cloſe. Conſidering that this orifice might be kept open by the diſeaſe of the organ, I directed my patient to rub half a drachm of ſtrong mercurial ointment every day on the region of the liver, ſuſpending the uſe of it occaſionally, that the mouth might not be affected. By perſevering in this courſe about ſix weeks, the whole of this immenſe induration ſubſided, and the fiſtulous opening, cloſed of itſelf. The ſucceſs of this caſe induced me to try the effect of mercurial frictions in two other inſtances, of an enlargement and induration of the liver, evident to the ſight and touch. Both theſe caſes were cured by this method; even the induration, which was fartheſt advanced, and in which a prominence appeared.

"Thoſe who are converſant in diſſection know, that large and indurated livers are commonly found in the abdomen of perſons who die of a dropſy in that cavity. Theſe indurations have, indeed, been reckoned by ſome as the chief and perhaps the only cauſe of theſe collections of water; which, if it be the caſe, muſt be owing to the preſſure of a hard maſs upon ſo large a vein as the vena cava; thus obſtructing the courſe of the blood returning to the heart; in the ſame manner as the preſſure of the gravid uterus occaſions an anaſarca in the legs of pregnant women. Is it not probable, then, that this terrible diſeaſe might be cured if this apparent cauſe were removed? Accordingly, I remember to have found (though I cannot recollect where, having unfortunately loſt many of my papers) that it was a practice uſed with ſucceſs in India, to rub the belly with mercurial ointment in the dropſy of that cavity.

"Some years ago I tranſlated a manuſcript paper for Dr. Fothergill, which had been ſent to him in the German language from a gentleman at Moſcow. The author mentioned that he had obſerved many internal complaints to proceed from indurations of the liver, which could not otherwiſe be accounted for. He accordingly recommended a more frequent examination of the ſtate of that organ than is generally attended to."

Dr. Saunders, phyſician to Guy's hoſpital, in London, has publiſhed a very excellent treatiſe on this diſeaſe; and we find in the Medical and Phyſical journal, ſome teſtimonies in favour of the doctor's ſentiments on it. The paper we allude to is an extract of a letter from Mr. Thomas Chriſtie, ſurgeon of the 80th regiment, dated Trincomale, iſland of Ceylon, May 21ſt, 1798.

"On our firſt arrival," ſays Mr. Chriſtie, "at this ſtation, which is accounted one of the moſt unhealthy in India, we were very ſickly: of late, however, we are become extremely healthy, have not many ſick, and but few caſualties.—During my reſid-

ence, although ſhort, in India, I have had conſiderable experience in the endemic diſeaſes of the country, particularly in *hepatitis*, and have had frequent opportunities of obſerving, in my own practice, the great juſtice and accuracy of Dr. Saunders's remarks on that complaint.

" As I had for ſome time the care of the whole garriſon here, I had then an excellent opportunity of obſerving the comparative frequency of the diſeaſe, and violence of the ſymptoms, among the men lately arrived from Europe, the Europeans long in India, and the native troops.

" I found, that among the men of the 80th regiment, for the firſt ſix or eight months, the diſeaſe was much more frequent, much more violent in its ſymptoms, ſhewed more tendency to ſuppuration, and was more ſudden in its criſis, than with the Company's European troops, who had been long in India, although the latter were the moſt debauched. Among the natives, hepatitis does not ſo often occur; out of the thouſand native troops, I did not, in the courſe of three months, meet with more than two caſes of liver complaints, which is, comparatively, a very ſmall proportion.

" The following inſtance is ſtrongly a proof of the propoſition in part 5. ſect. 1. chap. 5. with reſpect to the propenſity of the inflammation to the ſtomach, cauſing a conſtant reaching; it alſo ſeems to ſhew, that all the ſuppoſed pathognomic ſymptoms are not preſent in every inſtance of hepatitis: Corporal Potter, of the 80th regiment, a healthy young man, was attacked about the 6th of November, 1797, with ſymptoms of pyrexia, attended with pain at the pit of the ſtomach, dyſpnœa, and almoſt conſtant vomiting. As he had no cough, or affection of the bowels, he was treated as for an affection of the liver, although no tumor or particular pain was obſervable upon preſſure of the right hypochondrium, nor did he complain of the pain extending to the ſhoulder till within three days of his death, which happened on the 20th of November.

" Upon opening the abdomen after death, and raiſing the ſternum, I found the liver of its natural ſize, and in its uſual ſituation, without any adheſions between its convex ſurface and the abdominal peritonæum, ſo that I began to conceive I had been miſtaken in my opinion of the caſe, till obſerving the ſtomach particularly prominent, and ſome adheſion between it and the concave ſurface of the liver, I ſeparated theſe with my fingers, when I found nearly a quart of well-formed pus contained between the ſtomach and the concave ſurface of the liver, a part of which latter was corroded, but the reſt of that organ, as well as the ſtomach and other viſcera, were in a ſound ſtate.

" I have made a point of opening every perſon who has died

of the liver-complaint, while under my care; and amongſt the men of the 80th regiment, who were lately arrived from Europe, I did not find one out of twelve inſtances, in which ſuppuration had not exiſted in ſome part or other of the liver. Suppuration, I have every reaſon to believe, is not near ſo frequent amongſt the natives, or Europeans who have been long in the country; and, indeed, amongſt the men of the 80th regiment, who have now been above fifteen months in India, I find that, already, the diſeaſe puts on a different form, becomes leſs frequent, more ſlow in its progreſs, and ſhews much leſs tendency to run into ſuppuration. On my firſt coming here, I had originally ſixteen or ſeventeen men in the hoſpital with hepatitis—I have now ſeldom more than ſix or ſeven, and have not loſt a man from the complaint for the laſt two months, although we are now ſtronger in men than we were at that time, having being reinforced with drafts from ſome old regiments. From the mode of recruiting the army here, it ſeldom happens that the care of ſo many Europeans (about 800), juſt arrived in India, falls to the charge of one perſon, at one time; I therefore thought that theſe few remarks, as they relate to Europeans lately arrived in India, might be acceptable.

"There are many marſhes, and much bruſh-wood in the vicinity of the fort; the atmoſphere is moiſt; and moſt of the diſeaſes here are thoſe of debility;—to which I find the private men, as living worſe, are much more ſubject than the officers. The fever-complaint has, however, I think, attacked a greater proportion of officers than men.

"I ought to obſerve, that 'the *fever-complaint*' is a familiar phraſe in India for hepatitis; from inadvertency I make uſe too often of that indefinite term; but I always mean hepatitis, both of the acute and chronic kind.

"In agues, which are very frequent here, I have had an opportunity of making a comparative trial of the pale red, and yellow bark, and, from my own experience, have not the leaſt heſitation in giving the preference to the laſt."

As this is ſometimes *complicated with other diſeaſes*, an account of two diſſections, communicated to the Medical Society of London by Mr. Macmillan Jameſon, ſurgeon, in Port Royal in the iſland of Jamaica, will very properly cloſe our remarks on hepatitis.

"The number of years that men will live in the Weſt Indies with diſeaſed livers," ſays Mr. Jameſon, "and the length of time, frequently, before hepatitis proves fatal, eſpecially the chronic, or that ſpecies which affects the ſubſtance and internal parts of the liver, is very generally known, and requires no comment. Three caſes have occurred to me lately, within a ſhort

time of each other, which evince this; and confirm me in an opinion that hepatitis is here a more frequent disease than generally imagined.

"It is also of some importance to be able to distinguish between hepatitis and other diseases, as it is treated in a different manner from most others, which cases of this kind may lead to.

"I shall omit relating one case of hepititis that was complicated with dysentery, as I did not see the patient till the last extremity, nor could I obtain the particulars of his treatment.

CASE 1.—"Thomas Piddle, a seaman, in the naval hospital, at Port Royal, aged 28 years, of a very sanguine, florid complexion, was seized about eight weeks before his admission, with a violent pain in the region of the liver, attended also with a pain in the shoulder of his right side, dyspnœa, and other inflammatory symptoms, for which the surgeon of the ship had at first bled him, afterwards applied blisters to his side, and used different antiphlogistic remedies.

"The 26th of Nov. after his admission into the hospital, these symptoms continued to increase with greater violence, the pain in his side became more fixed, attended with great anxiety and a considerable fever. It was not till after his arrival at the hospital that I had an opportunity of seeing him; he was then put under a mercurial course, on the supposition of his having a hepatitis, which was continued till the mouth and gums were affected. The mercury was accompanied with opium, and other antispasmodics, as the urgency of the symptoms required, but without success, as he grew daily worse till the 29th of December, when he died."

Appearances on dissection.—"The cavity on the right side of the thorax was filled with a thin browish coloured fluid, which burst out freely on making an incision, and had the appearance of bloody serum in dropsy, mixed with purulent matter. The whole of the pleura lining this cavity had a rough sodden appearance; but there was no abscess or suppuration penetrating the mediastinum, or diaphragm, nor any communication between the diseased part, and the left cavity of the thorax or abdomen. That portion of the lungs occupying the right side of the chest was almost entirely destroyed, and the small part of it which remained, appeared like a congeries of the larger branches of its vessels, adhering together, and scarcely more than two ounces in weight. The left portion of the lungs was quite sound; the only appearances which deviated from a natural state were, a great flaccidity, and darker colour than usual; and I could not discern on the left side any of those adhetions of the lungs to the pleura, or tubercles, so common after inflammation in the thorax.

"Having always supposed this disease a hepatitis, I was rather surprised at the appearances in the thorax; and also, on opening the abdomen to find the liver only a little enlarged, and

it was not until I had cut deep into its ſubſtance, that I diſcovered an abſceſs in the lower and poſterior part of the right lobe, which contained a very thick yellow pus, part of it in coagula, very bland, and inoffenſive to the ſmell (perhaps from its not having been expoſed to air). This matter had not deſtroyed any of the exterior part of the liver, ſo as to diffuſe itſelf into the abdomen; and although the external appearances were ſo different from what might have been expected, yet that part which was in contact with the matter, had a rotten ſpongy appearance. The gall bladder was enlarged, and almoſt empty.

"From theſe appearances, I am of opinion, that the abſceſs in the liver was not the cauſe of this man's death, although during his life it was miſtaken for the entire diſeaſe; for the abſceſs was not very large, and the reſt of the liver was found; but that the immediate cauſe of his death was from the deſtruction of the lungs, and the quantity of matter which filled the right cavity of the thorax; and it is a query how far theſe diſeaſes were connected with each other, or if at all. The deceaſed having belonged to Prince William Henry's ſhip, he had been alternately from cold to warm climates (Halifax, Newfoundland, the Windward Iſlands, and Jamaica) in a ſhort ſpace of time. The hepatitis might have originated in the warm, and the inflammation of the thorax in the cold climate; eſpecially as I could not preſume, from the appearance of the left cavity of the thorax, that there were any ſeeds of conſumption, nor the man of a conſumptive habit; neither did I underſtand from himſelf that previouſly he had much cough or expectoration.

CASE 2.—"Jane Henderſon, a ſoldier's wife of the royal artillery, aged 29 years, had been at Gibraltar two years and a half before her arrival at Jamaica; ſhe was apparently a very ſtrong, healthy woman, but at times addicted to the free uſe of ardent ſpirits. On her firſt complaining to me ſhe was near her full time of pregnancy, and ſaid that ſhe had, for ſix months before, been much troubled with a pain in her right ſide, difficulty of breathing, and a ſmall ſhort cough, &c. which ſhe attributed to the fatigue of waſhing linen, and a trifling fall ſhe had from the platform in the barracks a conſiderable time before. I took as much blood from her as the nature of her ſituation and the climate would admit, and gave internally mild aperient medicines, with pectoral emulſions, &c. On examining her ſide, I could not obſerve any preternatural appearances, but ſhe complained of much pain on its being preſſed.

"I was ſent for two nights after this, to viſit her, and, on my arrival at the barracks, found her delivered, and in fits, which continued, with very little intermiſſion, till about two o'clock next morning, when ſhe died.—The child was born alive, but died in a few minutes afterwards, and appeared to be nearly full

grown. The attendants informed me, that, during the efforts of labour, she complained that something had given way within her, and was immediately after that seized with convulsions."

Appearances on dissection.—" Part of the liver was found much enlarged, but the rest appeared tabid, and more than half destroyed by a large abscess, the matter of which had deluged the abdomen, and was lying on the surface of the viscera. The diaphragm was very much inflamed, and that part of it which was in contact with the diseased liver had suppurated, and an abscess opened a communication with the right cavity of the thorax, where a considerable quantity of the matter was lying. The contents of the pelvis were no ways different from the appearances after a natural labour.

" I imagine that the abscess of the liver had burst, and effused itself, during the efforts of labour, at the period when she complained of something giving way within her.—The quantity of matter was very great, and quite different from that in Piddle's case, as this was thin, dark coloured, and extremely offensive."

Genus XVIII. SPLENITIS.

Inflammation of the Spleen.

Splenitis, *Sauv.* gen. 114. *Lin.* 36. *Vog.* 59. *Juncк.* 67. *Sag.* gen. 313.
Lienis inflammatio, *Boerh.* 958. and *Van Swieten.* Comm.
Splenitis phlegmonodæa, *Sauv.* sp. 1. *Foreſt.* l. xx. obs. 5. 6. *De Haen,* apud *Van Swieten,* p. 958.
Pleuritis splenica, *Sauv.* 19.
Splenalgia suppuratoria, *Sauv.* sp. 3.

1. *Description.*] This disease, according to *Juncker*, comes on with a remarkable shivering, succeeded by a most intense heat and very great thirst; a pain and tumor are perceived in the left hypochondrium, and the paroxysms for the most part assume a quartan form. When the patients expose themselves for a little to the free air, their extremities immediately grow very cold. If an hæmorrhagy happen, the blood flows out of the left nostril. The other symptoms are the same with those of the hepatitis. Like the liver, the spleen often is also subject to a chronic inflammation, which often happens after agues, and is called the *ague cake*, though that name is also frequently given to a scirrhous tumor of the liver succeeding intermittents.

2. *Causes*, &c.] The causes of this disease are in general the same with those of other inflammatory disorders; but those which

determine the inflammation to that particular part more than another, are very much unknown. It attacks perſons of a very plethoric and ſanguine habit of body rather than others.

3. *Prognoſis.*] What has been ſaid of the inflammation of the liver applies alſo to that of the ſpleen, though the latter is leſs dangerous than the former. Here alſo a vomiting of black matter, which in other acute diſeaſes is ſuch a fatal omen, ſometimes proves critical, according to the teſtimony of Juncker. Sometimes the hæmorrhoids prove critical; but very often the inflammation terminates by ſcirrhus.

4. *Cure.*] This is not at all different from what has been already laid down concerning the hepatitis.

Genus XIX. NEPHRITIS.

Inflammation of the Kidneys.

Nephritis, *Sauv.* gen. 115. *Lin.* 37. *Vog.* 65. *Sag.* gen. 314.
Nephritis vera, *Sauv.* ſp. 1.

1. *Deſcription.*] The nephritis has the ſame ſymptoms in common with other inflammations; but its diſtinguiſhing mark is the pain in the region of the kidney, which is ſometimes obtuſe, but more frequently pungent. The pain is not increaſed by the motion of the trunk of the body ſo much as a pain of the rheumatic kind affecting the ſame region. It may alſo frequently be diſtinguiſhed by its ſhooting along the courſe of the ureter, and it is often attended with a drawing up of the teſticle, and a numbneſs of the limb on the ſide affected; though indeed theſe ſymptoms moſt commonly attend the inflammation ariſing from a calculus in the kidney or ureter. The diſeaſe is alſo attended with frequent vomiting, and often with coſtiveneſs and colic pains. The urine is moſt commonly of a deep red colour, and is voided frequently and in a ſmall quantity at a time. In more violent caſes the urine is commonly colourleſs.

The other ſpecies of nephritis enumerated by authors are only ſymptomatic.

2. *Cauſes*, &c.] The remote cauſes of this diſeaſe may be various; as external contuſion, violent or long-continued riding; ſtrains of the muſcles of the back incumbent on the kidneys; various acrids in the courſe of circulation conveyed to the kidneys; and perhaps ſome other internal cauſes not yet well known: the moſt frequent is that of calculous matter obſtructing the *tubuli urinifori*, or calculi formed in the pelvis of the kidney, and either ſticking there or falling into the ureter.

In an account of ſome diſeaſes of the kidneys and bladder,

examined and explained by diſſections, by Mr. Walter, profeſſor at the Medico-Chirurgical College of Berlin, we find ſome remarks which may not improperly be ſtated in this place. Speaking of the laſt-mentioned cauſe of *nephritis*, the author obſerves, that—"Every calculus in the kidneys originates in the interior of them, increaſing from within towards without. Any heterogeneous matter, ſalt, earthy particles, blood, mucus, &c. remaining in one of the *calices* or *infundibula* in the kidneys, and not being carried away through the ureter by urine, cauſes a diſpoſition to a ſtone. For forming ſuch a calculus nature employs one or ſeveral *calices* or *infundibula*; and ſtones are, as it were, according to certain laws, but rarely generated in the other ſubſtance of the kidneys. The irritation of the foreign body occaſioning a congeſtion of blood at the place of its ſeat, the growth of the calculus is promoted by the adheſion of ſimilar particles. When the calculus is generating more in the middle of the kidneys, ſo as to be capable of extending itſelf equally; when the irritation is not become vehement enough to produce inflammation and ſuppuration, and the corruption of the kidneys proceeds ſlower than the growth of the calculus, this may increaſe to an extraordinary ſize, without the kidney's being in the leaſt morbidly affected. The largeſt calculus of this kind in the collection of Mr. Walter's father, weighed *three ounces and a half and two ſcruples.*

"The gangrene in the kidneys is commonly the conſequence of a calculus, but rarely of a previous vehement nephritis; it follows, when the inflammation occaſioned by the irritation of the calculus extends to the whole ſubſtance of the kidneys, and continues a long time in a violent degree, and when the blood ſtagnates in the veſſels; the ſubſtance of the kidneys is conſumed by ſuppuration, and the putrid blood becomes extravaſated, and is found ſometimes quite diſſolved.

"*The dropſy in the kidneys* is a diſeaſe, of which the cauſe is either to be ſought for in the kidneys themſelves, or in the parts adjacent to the ureter. It is always produced as ſoon as the paſſage in the ureter is obſtructed; and ſtones therefore which remain in the ureter and ſtop it, indurations of the duodenum and pancreas, indurated and enlarged lymphatic glands about the ureters, tumors, &c. dropſies of the *uterus*, of the *ovaria*, and of the Fallopian tubes, may, by compreſſing the ureters, occaſion a dropſy in the kidneys: an inflammation of the ureter is likewiſe able to cauſe an obſtruction in them, by producing an adheſion of its internal coats. This diſeaſe, however, occurs more frequently in females than in males. Stones are ſeldom the only cauſe of it, and it happens frequently that they generate by the precipitation of ſaline and earthy particles, after the obſtruction is already eſtabliſhed. The kidneys are generally ſo changed by this diſeaſe,

that nothing remains of them but the external membrane; and they have from the extending fluidity, the appearance of a bladder. The urine, which, on account of the ureter being obſtructed, cannot be carried to the bladder, ſtagnates in the ureter and kidneys, extending them to ſuch a degree that the ſecretion is at firſt diminiſhed, and at laſt entirely deſtroyed; and inſtead of urine, nothing but a lymphatic fluid is ſecerned by the remaining veſſels, which, however, never becomes ſharp or putrid. It is remarkable, that in a dropſy of the kidneys, fat is never found about them, which is always the caſe when the kidneys are deſtroyed by a calculus. In ſome rare caſes it has been obſerved, that an obſtruction of the ureter did not produce a dropſy, the urine being evacuated another way, by perſpiration, &c."

3. *Prognoſis.*] This is not different from that of other inflammatory diſeaſes. The remote conſequences, however, are eſſentially different. The kidneys are ſometimes conſumed, extended and excavated by topical ſuppuration, that nothing remains of them but the external membrane, and they reſemble a bladder. This diſeaſe, however, may in ſome caſes be cured, whereas the dropſy in the kidneys is always incurable, and brings on death at laſt.

4. *Cure.*] When any of thoſe cauſes operating as inducing the inflammation ſtill continue to act, the firſt object in the cure muſt be the removal of them; but the principal intention to be had in view, is the reſolution of the inflammation which has already taken place. But when, notwithſtanding efforts for this purpoſe, the diſeaſe terminates in ſuppuration, it muſt be the endeavour of the practitioner to promote the diſcharge of purulent matter, and the healing of the ulceration in the kidney.

Theſe different objects are principally accompliſhed by bleeding, external fomentation, frequent emollient clyſters, antiphlogiſtic purgatives, and by the free uſe of mild and demulcent liquids. The uſe of bliſters is ſcarce admiſſible, or at leaſt will require great care to avoid any conſiderable abſorption of the cantharides.

Dr. Fordyce ſays it admits of a natural cure, viz. the urine grows high coloured, is ſecreted in greater quantity, and at laſt is copious, thick, and mixed with mucus, relieving, and gradually diminiſhing the pain and other ſymptoms, till the patient's health is reſtored.

It may alſo go off by *metaſtaſis*, &c. as other internal inflammations; or it may terminate in gangrene and mortification, which, in the interior parts of the body, are almoſt conſtantly fatal, and nearly with the ſame ſymptoms. (Vide the Pleuriſy.) In this caſe there is likewiſe an alteration of the urine, accompanied with *fetor*; or the inflammation may go off, and leave a

ſcirrhus, which is known from the patient being relieved, although the natural cure has not taken place, nor any ſymptom of ſuppuration appeared; from a ſenſible hardneſs ſometimes continuing in the part; a *ſtupor* in the lower extremities on the ſide affected; and a diminution of the ſecretion of urine.

Or the kidney may ſuppurate, which is indicated by the common ſymptoms of internal ſuppuration.

The abſceſs breaks (1) into the *pelvis*; (2) into the cavity of the *abdomen*; (3) or laſtly, externally.

(1) In the firſt caſe, the ſenſe of weight, and diſtenſion of the kidney (if any there were), goes off ſuddenly, and, at the ſame time, the urine is mixed with *pus*, which ſubſides to the bottom in a great quantity upon the breaking of the abſceſs, but afterwards in leſs.

If the matter is white, thick, and not fetid, the ulcer ſometimes heals; otherwiſe a hectic fever comes on, and the patient is cut off: or, laſtly, the ulcer may continue a long time without proving fatal. The ulcer generally heals ſoon, or not at all.

(2) If it break into the cavity of the *abdomen*, it kills. (Vide *Hepatitis*.)

(3) If it open externally, the urine comes away with the *pus*, and an ulcer is formed of very difficult cure.

Inflammation of the kidney ſhould be diſtinguiſhed from a ſtone obſtructing the ureter, from inflammation of the *pſoas muſcle* and other adjacent parts, and from inflammation, and ſpaſmodic or other pains, in the inteſtines.

The cure is to be performed by the medicines commonly uſed in internal inflammations; to which may be added the following:

(1) Gentle diuretics.

(No. 120.) ℞ Sem. Lini ʒß.
Sem. Petroſel. ʒß.
Aq. Font. Bullient. ℔j.
Infundantur ſimul per Hor. ß. et cola.
Colaturæ adde Succ. Limonum,
Sacch. Alb. āā q. ſ. ad gratam acedinem dulcedinemque.
Bibat Poculum frequenter.

A moderately warm *ſemicupium* may alſo be uſed to promote the ſecretion of urine.

(2) Mild laxatives and clyſters. (Vide Formulæ No. 44. and 34.)

(3) If there ſhould be any external ſymptoms, fomentations and poultices may be uſed.

(No. 121.) ℞ Flor. Chamœmel.
Vel, Summit. Abſynth.
Vel, Summit. Centaur. minor. Manip. ij.
Rad. Bryon. Alb. recent. ℥j.
Folior. Malv. vel. Altheæ Manip. j.
Contunde et leviter coque in aquæ fontis lib. iv.
Colatura utatur pro fotu ter indies.
Adde herbis coctis ung. ſimp. ℥ij. Fiat Cataplaſma, part. adfect. applicandum.

Lying on the back, as it prevents the paſſage of the urine into the bladder, is to be avoided.

If the kidney ſhould ſuppurate, the treatment is to be nearly the ſame as in ſuppurations of the liver. (Vide *Hepatitis.*) And the patient is alſo to take infuſion of linſeed, or decoction of althæa root, for his common drink, after the abſceſs is broken, in order to dilute the urine, and prevent it from ſtimulating the ſurface of the ulcer, which would hinder the cure.

Some have propoſed the exhibition of the balſams of trees, to promote the granulation; but the bark appears to be preferable.

The management of the food, &c. in theſe ſuppurations, is to be the ſame as in the pulmonary conſumption.

Genus XX. CYSTITIS.

Inflammation of the Bladder.

Cyſtitis, *Sauv.* gen. 108. *Lin.* 31. *Vog.* 66. *Sag.* gen. 309.
Inflammatio veſicæ, *Hoffm.* II. 157.

The Cystitis from *Internal Cauſes.*

Cyſtitis ſpontanea, *Sauv.* ſp. 1.

The Cystitis from *External Cauſes.*

Cyſtitis a cantharidibus, *Sauv.* ſp. 2.
Cyſtitis traumatica, *Sauv.* ſp. 3.

Inflammation of the exterior coats of the bladder differs from the abraſion, exulceration, or inflammation of the internal, or mucous membrane.

It is produced by the cauſes of internal inflammation; by the rubbing, or preſſure of a ſtone; external hurts; and by ſtrictures in the urethra.

The neck of the bladder is thicker than any other part, and more expoſed to injury from the ſtone and bruiſes. The ſtone in the bladder, however, more commonly produces an inflammation, or abraſion of the mucous membrane, than this diſeaſe.

The inflammation begins with a violent pain in the region of the bladder, *i. e.* in the *perinæum*, or in the belly, immediately above the *pubis*, deep ſeated, and ſometimes attended by a redneſs in theſe parts. If the neck be the part affected, there is a retention of urine, together with a conſtant *ſtimulus* to its evacuation; if the bottom be the part diſeaſed, there is a continual dribbling, with great efforts to throw out a larger quantity at a time, which the patient conceives to be contained in the bladder. The ſymptoms are accompanied with frequent attempts to expel the *fæces*, with which the *rectum* appears to the patient to be always loaded; theſe increaſe the pain very much, particularly when any *fæces* are actually contained, and eſpecially if they be hard. The pulſe is frequent and hard, the extremities become cold, there is immenſe anxiety and reſtleſſneſs, with ſickneſs, vomiting, delirium, and the other ſymptoms of irritation, as in the inflammation of the inteſtines, and the patient for the moſt part is cut off in a ſhort time.

It alſo frequently terminates in gangrene and mortification; the pain goes off, but the other ſymptoms continue, and the patient dies ſoon after. Or it may be carried off by an increaſed ſecretion of *mucus* from the internal membrane, gradually relieving the ſymptoms; or by a *metaſtaſis*. Or if the diſeaſe ſhould not be ſo violent, eſpecially when the neck of the bladder is the part affected, it may proceed to ſuppuration, moſt of the ſymptoms going off; uncertain rigors and coldneſs taking place; and a difficulty in making water, or a total retention of it, with a conſtant irritation to its evacuation, or a *teneſmus*, with a ſenſe of weight (as the abſceſs occupies the neck or *fundus*), remaining till the *pus* is evacuated.

The matter may make its way into the bladder, and come away with the urine, leaving an ulcer there: or into the cellular membrane, and from thence externally by the *perinæum*, after deſtroying the circumjacent parts in its paſſage, and producing a *ſinuous* ulcer; or it may get through the *peritonæum* into the *abdomen*, when it generally brings on fatal ſymptoms. The ulcers in the bladder and *perinæum* are of difficult cure.

It ſhould be diſtinguiſhed from inflammations of the circumjacent parts, and from retention of urine produced by other cauſes.

It is to be cured by the common means of *reſolution* in internal inflammations; as bleedings, relaxants, &c. Theſe are to be employed immediately on the appearance of the diſeaſe, and proſecuted with vigour, or it will ſoon be fatal. There ſhould be

added gentle laxatives, or clyſters, to keep the belly open, eſpecially the firſt; as clyſters by preſſing on the bladder, when a part near the *rectum* is inflamed, may be detrimental, and ſhould therefore only be uſed when there are indurated *fæces*.

(No. 34.) but in ſmaller quantity, is proper in this caſe; otherwiſe (No. 44.) may be exhibited twice a-day, or oftener, as there may be occaſion.

If there ſhould be external ſymptoms, the fomentations and poultices (No. 116. are to be applied; taking care that they do no hurt by their preſſure, and that the cloths or herbs be not too moiſt, leſt the water ſhould run upon the linen and bed clothes.

If there ſhould be no external ſymptoms, the ſkin of the belly and *perinæum* is to be rubbed with (No. 62.) which is preferable to bliſters, on account of the inconvenience of their application.

The drink ſhould be mucilaginous decoctions; and if the urine be retained from a ſtricture in the neck of the bladder, only in ſmall quantities.

In this caſe, too, it is neceſſary to evacuate the urine by art, to avoid gangrene and mortification; but this ſhould be done with great caution. If, notwithſtanding the uſe of theſe remedies, and after ſufficient evacuation, a ſpaſmodic contraction and pain ſhould continue; opiates, as in inflammations of the inteſtines, may ſometimes be uſeful.

If the bladder ſuppurate, the *pus* is to be evacuated as ſoon as poſſible, and the remedies already recommended in ulcers of the kidneys are to be employed.

The inflammation of the bladder from *internal cauſes* is a very rare diſeaſe; and when it does at any time occur, is to be cured in the ſame manner with other inflammations, avoiding only the uſe of cantharides. When the diſeaſe ariſes from the internal uſe of theſe flies, camphor is recommended, beſides mucilaginous medicines, and particularly cooling and emollient clyſters.

Genus XXI. HYSTERITIS.

Inflammation of the Uterus.

Hyſteritis, *Lin* 38. *Vog.* 63.
Metritis, *Sauv.* gen. 107. *Sag.* gen. 315.
Inflammatio et febris uterina, *Hoffm.* II. 156.

1. *Deſcription.*] This diſeaſe is often confounded with that called the *puerperal* or *child-bed fever*; but is eſſentially diſtinct from it, as will be ſhewn in its proper place. The inflammation of the uterus is often apt to terminate by gangrene: there is a pain in the head, with delirium; and the uterine region is ſo exceed-

ingly tender, that it cannot bear the moſt gentle preſſure without intolerable pain. When the *fundus uteri* is inflamed, there is great heat, throbbing, and pain, above the pubes: if its poſterior part, the pain is more confined to the loins and rectum, with a teneſmus; if its anterior part, it ſhoots from thence towards the neck of the bladder, and is attended with frequent irritation to make water, which is voided with difficulty; and if its ſides or the ovaria are affected, the pains will then dart into the inſide of the thighs.

2. *Cauſes*, &c.] Inflammations of the uterus, and indeed of the reſt of the abdominal viſcera, are very apt to take place in child-bed women; the reaſon of which ſeems to be the ſudden change produced in the habit, and an alteration in the courſe of the circulating blood by the contraction of the uterus after delivery. The preſſure of the gravid uterus being ſuddenly taken off from the *aorta deſcendens* after delivery, the reſiſtance to the impulſe of the blood paſſing through all the veſſels derived from it, and diſtributed to the contiguous viſcera, will be conſiderably leſſened: it will therefore ruſh into thoſe veſſels with a force ſuperior to their reſiſtance; and, by putting them violently on the ſtretch, may occaſion pain, inflammation, and fever. This contraction of the uterus alſo renders its veſſels impervious to the blood which had freely paſſed through them for the ſervice of the child during pregnancy; and conſequently a much larger quantity will be thrown upon the contiguous parts, which will ſtill add to their diſtenſion, and increaſe their tendency to inflammation.

3. *Prognoſis.*] An inflammation of the uterus generally may be expected to produce an obſtruction of the lochia; but the fever produced ſeldom proves fatal, unleſs the inflammation be violent, and end in a gangrene.

4. *Cure.*] This is to be attempted by the ſame general means already recommended, and the management of this diſorder entirely coincides with that of the puerperal fever.

Dr. Fordyce ſays, it may be naturally cured by the *menſtrua*, or *lochia*, breaking out plentifully; or after child-birth, or abortion, by the patient's falling into a conſtant, equal, gentle, long-continued ſweat. Or it may terminate in gangrene and mortification, with the uſual ſymptoms of internal miſchief, and kill.

Or it may ſuppurate, with the common ſymptoms, and the abſceſs formed may break into the cavity of the *uterus*, bladder, or *rectum*, or externally, by the *perinæum*, or into the cavity of the *abdomen*. In this laſt caſe it is fatal, and in others leaves ulcers difficult of cure.

Or it may be cured by *metaſtaſis*.

Or it may leave a *ſcirrhus* behind.

Inflammation of the womb in delicate or weak women after child-birth, where there is no hardneſs, but great frequency of the

pulſe, is for the moſt part fatal. The only remedies we can employ in this caſe are, the keeping the patient in bed moderately warm, exciting, if poſſible, a gentle, conſtant ſweat, by *farinaceous* decoctions in ſmall quantities at a time, but frequently repeated; and applying antiſpaſmodic fomentations, and poultices, as (No. 116.), to the lower region of the belly, and external parts of generation. Bleeding increaſes the weakneſs without diminiſhing the inflammation; relaxants produce great ſweating or purging, without relief; and all very conſiderable evacuations are hurtful. The belly not having hitherto been rubbed with ſtimulants and antiſpaſmodics, it is worth while to try them, and (No. 85.) may be uſed: but bliſters, beſides the inconveniency of their application, are apt to render the pulſe more frequent. In abortions, and labours, where the patient has not been ſo much weakened, when the pulſe is hard and not very frequent, it is uſeful to take away blood, but this evacuation cannot in general be often repeated with advantage; and therefore the cure is afterwards to be committed to relaxants (No. 27.) and antiſpaſmodic fomentations and poultices (No. 116), taking care that the firſt produce no purging, and keeping the patient in bed, moderately warm. When the *lochia* have ſtopped, ſtimulating *emmenagogues* have ſometimes been uſed, in many caſes, with manifeſt diſadvantage, and ſeldom with good effect.

If the pain continues in theſe caſes, notwithſtanding the above treatment, opiates may ſometimes be given with ſucceſs, as in inflammations of the inteſtines.

When the inflammation attacks a womb not lately impregnated, the common remedies uſed in internal inflammations are to be employed, according as the diſeaſe is attended with general inflammation, or the ſymptoms of irritation.

We are always to guard againſt preſſure on the part affected, whether that preſſure be external, or ariſe from urine contained in the bladder, or from *fæces* in the *rectum*: in the ſecond of theſe caſes this may be done by a catheter; and in the third by clyſters, which, after labours where the patient is weak, ſhould conſiſt almoſt ſolely of watery fluids.

The food, when the patient is much reduced after labour, muſt be animal broths; otherwiſe *farinaceous* decoctions.

If the *uterus* ſhould ſuppurate, we are to endeavour to procure an exit to the *pus* as ſoon as poſſible; which however can hardly be done, except when it points in the *perinæum*, where poultices of bread, milk, and oil, are in this caſe to be applied; and as ſoon as any fluctuation is felt, the abſceſs is to be opened.

In addition to what has here been ſaid on internal inflammations, it is neceſſary to obſerve, that inflammations alſo ſometimes ariſe in the other abdominal *viſcera*; but being attended with ſymptoms ſimilar to thoſe already treated of, excepting for the

ſituation, requiring a ſimilar treatment, and happening but ſeldom, they are not here enumerated.

Genus XXII. RHEUMATISMUS.

The Rheumatiſm.

Rheumatiſmus, *Sauv.* gen. 185. *Lin.* 62. *Vog.* 138. *Boerh.* 1490. *Junck.* 19.
Dolores rheumatici et arthritici, *Hoffm.* II. 317.
Myoſitis, *Sag.* gen. 301.

The *Acute* Rheumatism.

Rheumatiſmus acutus, *Sauv.* ſp. 1.
Rheumatiſmus vulgaris, *Sauv.* ſp. 2.

A. The Lumbago, or *Rheumatiſm in the Muſcles of the Loins.*

Lumbago rheumatica, *Sauv.* gen. 212. *Sag.* p. 1.
Nephralgia rheumatica, *Sauv.* ſp. 4.

B. The Sciatica, *Iſchias, or Hip-Gout.*

Iſchias rheumaticum, *Sauv.* 213. ſp. 10.

C. The *Baſtard* Pleurisy, or *Rheumatiſm in the Muſcles of the Thorax.*

Pleurodyne rheumatica, *Sauv.* gen. 148. ſp. 3.
Pleuritis ſpuria, *Boerh.* 878.

The other ſpecies, which are very numerous, are all ſymptomatic; as,
Lumbago plethorica, *Sauv.* ſp. 3.
Iſchias ſanguineum, *Sauv.* ſp. 2.
Pleurodyne plethorica, *Sauv.* ſp. 1.
Rheumatiſmus hyſtericus, *Sauv.* ſp. 7.
Iſchias hyſtericum, *Sauv.* ſp. 7.
Pleurodyne hyſterica, *Sauv.* ſp. 6.
Rheumatiſmus ſaltatorius, *Sauv.* ſp. 8.
Pleurodyne flatulenta, *Sauv.* ſp. 4.
Pleurodyne a ſpaſmate, *Sauv.* ſp. 9.
Rheumatiſmus ſcorbuticus, *Sauv.* ſp. 4.
Lumbago ſcorbutica, *Sauv.* ſp. 5.

Pleurodyne ſcorbutica, *Sauv.* ſp. 11.
Iſchias ſyphiliticum, *Sauv.* ſp. 7.
Pleurodyne venerea, *Sauv.* ſp. 5.
Lumbago ſympathica, *Sauv.* ſp. 13.
a meſenterii glandulis induratis,
a pancreate tumido, purulento, ſcirrhoſo, putri,
ab induratis pyloro, vena cava, pancreate,
a rene ſcirrhoſo, putrefacto,
ab abſceſſu circa venæ cavæ bifurcationem,
a vermibus intra renes,
Lumbago a ſaburra, *Sauv.* ſp. 8.
Pleurodyne a cacochymia, *Sauv.* ſp. 7.
Rheumatiſmus ſaltatorius verminoſus, *Sauv.* ſp. 8.
Iſchias verminoſum, *Sauv.* ſp. 8.
Pleurodyne verminoſa, *Sauv.* ſp. 2.
Rheumatiſmus metallicus, *Sauv.* ſp. 10.
Lumbago a hydrothorace, *Sauv.* ſp. 14.
Lumbago pſeudoiſchuria, *Sauv.* ſp. 16.
Pleurodyne a rupto œſophago, *Sauv.* ſp. 20.
Pleurodyne rachitica, *Sauv.* ſp. 13.
Iſchias a ſparganoſi, *Sauv.* ſp. 5.
Pleurodyne catarrhalis, *Sauv.* ſp. 14.
Rheumatiſmus necroſeos, *Sauv.* ſp. 14.
Rheumatiſmus dorſalis, *Sauv.* ſp. 11.
Lumbago a ſatyriaſi, *Sauv.* ſp. 15.
Rheumatiſmus febricoſus, *Sauv.* ſp. 9.
Lumbago febrilis, *Sauv.* ſp. 4.
&c. &c.

1. *Deſcription.*] The rheumatiſm is particularly diſtinguiſhed by pains affecting the joints, and for the moſt part the joints alone; but ſometimes alſo the muſcular parts. Very often they ſhoot along the courſe of the muſcles from one joint to another, and are always much increaſed by the action of the muſcles belonging to the joint or joints affected. The larger joints are thoſe moſt frequently affected, ſuch as the hip-joint and knees of the lower extremities, and the ſhoulders and elbows of the upper bones. The ancles and wriſts are alſo frequently affected; but the ſmaller joints, ſuch as thoſe of the toes or fingers, ſeldom ſuffer. Sometimes the diſeaſe is confined to one part of the body, yet very frequently it affects many parts of it; and then it begins with a cold ſtage, which is immediately ſucceeded by the other ſymptoms of pyrexia, and particularly by a frequent, full, and hard pulſe. Sometimes the pyrexia is formed before any pains are perceived; but more commonly pains are felt in particular parts before any ſymptoms of pyrexia occur. When no pyrexia is preſent, the pain may be confined to one joint only; but when any

conſiderable pyrexia takes place, though the pain may chiefly be felt in one joint, yet it ſeldom happens that the pains do not affect ſeveral joints, often at the very ſame time, but for the moſt part ſhifting their place, and having abated in one joint they become more violent in another. They do not commonly remain long in the ſame joint, but frequently ſhift from one to another, and ſometimes return to joints formerly affected; and in this manner the diſeaſe often continues for a long time. The fever attending theſe pains has an exacerbation every evening, and is moſt conſiderable during the night, when the pains alſo become more violent; and it is at the ſame time that the pains ſhift their place from one joint to another. Theſe ſeem to be alſo increaſed during the night by the body being covered more cloſely, and kept warmer.

A joint, after having been for ſome time affected with pain, commonly becomes alſo affected with ſome ſwelling and redneſs, which is painful to the touch. It ſeldom happens that a ſwelling coming on does not take off the pain entirely, or ſecure the joint againſt a return of it. This diſeaſe is commonly attended with more or leſs ſweating, which occurs early, but is ſeldom free or copious, and ſeldom either relieves from the pains or proves critical. The urine is high coloured, and in the beginning without ſediment. This, however, does not prove entirely critical, for the diſeaſe often continues long after ſuch a ſediment has appeared in the urine. The blood is always ſizy. The acute rheumatiſm differs from all other inflammatory diſeaſes, in not being liable to terminate in ſuppuration: this almoſt never happens; but the diſeaſe ſometimes produces effuſions of a tranſparent gelatinous fluid into the ſheaths of the tendons: but if theſe effuſions be frequent, it is certain that the liquor muſt very frequently be abſorbed; for it very ſeldom happens, that conſiderable or permanent tumors have been produced, or ſuch as required to be opened and to have the contained fluid evacuated. Such tumors, however, have ſometimes occurred, and the opening made in them has produced ulcers very difficult to heal.

Sometimes the rheumatiſm will continue for ſeveral weeks; but it ſeldom proves fatal, and it is rare that the pyrexia continues to be conſiderable for more than two or three weeks. While the pyrexia abates in its violence, if the pains of the joints continue, they are leſs violent; more limited in their place, being confined commonly to one or a few joints only; and are leſs ready to change their place.

It is often a very difficult matter to diſtinguiſh rheumatiſm from gout: but in rheumatiſm there in general occurs much leſs affection of the ſtomach; it affects chiefly the larger joints, and ſeveral of theſe are often affected with ſevere pain at the ſame time; it occurs at an earlier period of life than gout; it is not

obſerved to be hereditary; and it can in general be traced to ſome obvious exciting cauſe, particularly to the action of cold.

2. *Cauſes*, &c.] This diſeaſe is frequent in cold, and more uncommon in warm, climates. It appears moſt frequently in autumn and ſpring; leſs frequently in winter, while the froſt is conſtant; and very ſeldom during the heat of ſummer. It may, however, occur at any ſeaſon, if viciſſitudes of heat and cold be for the time frequent. For the moſt part, the acute rheumatiſm ariſes from the application of cold to the body when unuſually warm; or when the cold is applied to one part of the body while the other parts are kept warm; or laſtly, when the application of the cold is long continued, as when moiſt or wet clothes are applied to any part of the body.—Theſe cauſes may affect perſons of all ages; but the rheumatiſm ſeldom appears either in very young or in elderly perſons, and moſt commonly occurs from the age of puberty to that of thirty-five. Theſe cauſes may alſo affect perſons of any conſtitution, but they moſt commonly affect thoſe of a ſanguine temperament.

With reſpect to the proximate cauſe of rheumatiſm, there have been various opinions. It has been imputed to a peculiar acrimony; of which, however, there is no evidence; and the conſideration of the remote cauſes, the ſymptoms, and cure, render it very improbable. A diſeaſe of a rheumatic nature, however, may be occaſioned by an acrid matter applied to the nerves, as is evident from the tooth-ach, a rheumatic affection generally ariſing from a carious tooth. Pains ariſing from deep-ſeated ſuppurations may alſo reſemble the rheumatiſm; and many caſes have occurred in which ſuch ſuppurations occaſioned pains reſembling the lumbago and iſchias; but from what hath been already ſaid, it ſeems improbable that ever any rheumatic caſe ſhould end in ſuppuration.

The proximate cauſe of rheumatiſm hath by many been ſuppoſed to be a lentor in the fluids obſtructing the veſſels of the part; but in the former part of this treatiſe, ſufficient reaſons have been already laid down for rejecting the doctrine of lentor. While we cannot therefore find either evidence or reaſon for ſuppoſing that the rheumatiſm depends on any change in the ſtate of the fluids, we muſt conclude that the proximate cauſe of it is the ſame with that of other inflammations not depending upon a direct ſtimulus.

In the caſe of rheumatiſm, it is ſuppoſed that the moſt common remote cauſe of it, that is, cold applied, operates eſpecially on the veſſels of the joints, theſe being leſs covered by a cellular texture than thoſe of the intermediate parts of the limbs. It is farther ſuppoſed, that the application of cold produces a conſtriction of the extreme veſſels, and at the ſame time an increaſe of tone, or phlogiſtic diatheſis in the courſe of them, from which ariſes an increaſed impetus of the blood, and at the ſame time a reſiſtance

to the free paſſage of it, and conſequently inflammation and pain. It is alſo ſuppoſed, that the reſiſtance formed excites the *vis medicatrix* to a further increaſe of the impetus of the blood; and to ſupport this, a cold ſtage ariſes, a ſpaſm is formed, and a pyrexia and phlogiſtic diatheſis are produced in the whole ſyſtem.

Hence the cauſe of rheumatiſm appears to be exactly analogous to that of inflammations depending on an increaſed afflux of blood to a part while it is expoſed to the action of cold. But there ſeems to be further in this diſeaſe ſome peculiar affection of the muſcular fibres. Theſe ſeem to be under ſome degree of rigidity, and therefore leſs eaſily admit of motion, and are pained upon the exertions of it. This alſo ſeems to be the affection which gives opportunity to the propagation of pains from one joint to another, and which are moſt ſeverely felt in the extremities terminating in the joints, becauſe beyond theſe the oſcillations are not propagated. This affection of the muſcular fibres explains the manner in which ſtrains and ſpaſms produce rheumatic affections; and, on the whole, ſhows, that with an inflammatory affection of the ſanguiferous ſyſtem, there is alſo in rheumatiſm a peculiar affection of the muſcular fibres, which has a conſiderable ſhare in producing the phenomena of the diſeaſe. And it would even appear, that in what has commonly been called *acute rheumatiſm*, in contradiſtinction to the chronic, of which we are next to treat, there exiſts not only a ſtate of active inflammation in the affected parts, but alſo of peculiar irritability; and that this often remains after the inflammation is very much diminiſhed, or has even entirely ceaſed. Hence a renewal of the inflammation and recurrence of the pain take place from very ſlight cauſes; and in the treatment of the diſeaſe both the ſtate of inflammation and irritability muſt be had in view.

3. *Cure.*] For counteracting the ſtate of active inflammation, the chief aim of the practitioner muſt be to diminiſh the general impetus of the circulation, and the impetus at the part particularly affected. For counteracting the ſtate of irritability, he muſt endeavour to remove the diſpoſition to increaſed action in the veſſels; to prevent the action of cauſes exciting painful ſenſations; and to obviate their influence on the part. The cure therefore requires, in the firſt place, an antiphlogiſtic regimen, and particularly a total abſtinence from animal food, and from all fermented or ſpirituous liquors; ſubſtituting a mild vegetable or milk diet, and the plentiful uſe of ſoft diluting liquors. On this principle alſo, blood-letting is the chief remedy for acute rheumatiſm. The blood is to be drawn in large quantity; and the bleeding is to be repeated in proportion to the frequency, fulneſs, and hardneſs of the pulſe, and the violence of the pain. For the moſt part, large and repeated bleedings during the firſt days of the

diſeaſe ſeem to be neceſſary, and accordingly have been very much employed: but to this ſome bounds are to be ſet; for very profuſe bleedings occaſion a ſlow recovery, and if not abſolutely effectual, are apt to produce chronic rheumatiſm.

To avoid that debility of the ſyſtem which general bleedings are apt to occaſion, the urgent ſymptom of pain may be often relieved by topical bleedings; and when any ſwelling or redneſs have come upon a joint, the pain may very certainly be relieved by topical bleedings: but as the pain and continuance of the diſeaſe ſeem to depend more upon the phlogiſtic diatheſis of the whole ſyſtem than upon the affection of particular parts, ſo topical bleedings will not ſupply the place of the general bleedings propoſed above.

To take off the phlogiſtic diatheſis prevailing in this diſeaſe, purging may be uſeful, if procured by medicines which do not ſtimulate the whole ſyſtem, as neutral ſalts, and other medicines which have a refrigerant power. Vide Formulæ, No. 3, 4, 19, 20, 44, &c. Purging, however, is not ſo uſeful as bleeding in removing the phlogiſtic diatheſis; and when the diſeaſe has become general and violent, frequent ſtools are inconvenient, and even hurtful, by the motion and pain which they occaſion. Dr. Saunders orders the following:

(No. 122.) ℞ Nitri purificati gr. x.
Pulv. tragacanth. comp ʒj.
Conterantur ut fiat pulvis, ter quotidie ſumendus.

Next to blood-letting, nothing is of ſo much ſervice, both in alleviating the pains in this diſeaſe and in removing the phlogiſtic diatheſis, as the uſe of ſudorifics; and of all the medicines belonging to this claſs, the *pulv. ipecac. comp.* which has commonly been known by the name of Dover's powder, is the moſt convenient and effectual. Copious ſweating, excited by this medicine, and ſupported for ten or twelve hours by tepid diluents, ſuch as decoction of the woods, or the like, will in moſt inſtances produce a complete remiſſion of the pain: and indeed, by this practice, combined with blood-letting and proper regimen, the diſeaſe may often be entirely removed.

After proper evacuations, Dr. Saunders recommends the following:

(No. 123.) ℞ Liquoris volatilis cornu cervi gutt. xx.
Tincturæ colombæ ʒj.
Aquæ cinnamomi
Aquæ diſtillatæ ſing. ʒvj. Miſce.
Fiat Hauſtus, hora prima pomeridiana, et ſexta veſpertina, quotidie ſumendus.

(No. 124.) ℞ Antimon. tartarisat.
Opii purificati
Calomel. sing. (in pulv. trit.) gr. v.
Conservi rosæ rubr. q. s.
Fiat pilulæ decem, unam quarum capiat omni nocte.

The late Dr. Hugh Smith, who treated this disease very successfully, says, the acute rheumatism is to be remedied by a treatment greatly analogous to that which is proper in the acute fever, as its causes and events are nearly the same. He gives the following formulæ:

(No. 125.) ℞ Aq. fontan. ℥jß.
Sp. Nuc. Mosch. ʒj.
Sal. corn. cerv. vol. ℈ß. ad ℈j.
Nitri gr. xv. ad ℈j.
Syr. croci, ʒj.
M. ft. Haust. quarta vel sexta quaque hora sumend.

Vel (No. 126.) ℞ Julep. e camphor.
Aq. fontan. aa ℥j.
Vin. antimonial. ʒj.
Nitri gr. xv. ad ℈j.
M. ft. Haust. quinta quaque hora sumend.

In case of great pain, the following sudorific bolus may be taken at bed-time, and repeated every night as occasion may require:

(No. 127.) ℞ Extract. thebaic. gr. iij.
Pulv. rad. ipecacuan. gr. iiij.
Nitri purificati
Tartar. vitriolat. aa ℈ß.
Syr. croci, q. s. ut ft. Bolus.

Vel (No. 128.) ℞ Sal. tartar. gr. xv.
Pulv. rad. hellebor. alb.
——— liquorit. aa. gr. vj.
Extract. thebaic. gr. iij. ad v.
M. ft. Pulvis.

Vel (No. 129.) ℞ Ol. anisi ʒjß ad ʒij.
Sumat ex haustul. cujusvis liquor. superbibat etiam æger, ℔j. seri lact. vinos. tenuis. vel aquæ hord. vel alii alicujus potulenti diluent. donec copiose difluat sudor.

If the extremities should swell, and be very full of pain, leeches may be applied to the tumified parts. Warm attenuating cataplasms may likewise be applied to advantage.

(No. 130.) ℞ Farin. fecalis ℔j.
Fermenti veter. acris ℥iiij.
Sal. commun. ℥ij.
Aq. tepid. q. s.

These, being wrought into a paste, should be wrapt round

the part affected as warm as may be, and renewed morning and evening.

This disease frequently, after some days, puts on the appearance of an intermittent. The bark under these circumstances becomes a sovereign remedy; and, indeed, whether this should be the case or not, when plentiful sweats break out, and the urine deposits a copious sediment, the bark will by all means be advisable, and greatly cut short the disease.

(No. 131.) ℞ Decoct. cort. Peruv. ℥iß.
Extract. cort. Peruv. ʒß.
Tinct. cort. aurant.
Syr. croci, aa ʒiß.
M. ft. Haust. tertia vel quarta quaque hora sumendus.

By the early use of this remedy where a complete intermission from pain is obtained, the necessity of repeated blood-letting and sweating is often superseded; but where a complete remission cannot be obtained, it has been suspected by some to be hurtful: and in these cases, when blood-letting and sudorifics have been pushed as far as may be thought prudent without being productive of the desired effect, very great benefit is often obtained from the use of calomel combined with opium, as recommended in the Edinburgh Medical Commentaries, by Dr. Hamilton of Lynn-Regis. Vide p. 394.

In this disease, external applications are of little service. Fomentations in the beginning of the disease rather aggravate than relieve the pains. The rubefacients and camphire (No. 61.) are more effectual; but they commonly only shift them from one part to another, and do not prove any cure of the general affection. Blistering may also be very effectual in removing the pain from a particular part; but will be of little use, except where the pains are much confined to one place. Vide (No. 92.)

ARTHRODYNIA, or *Chronic Rheumatism.*

Rheumatismus chronicus Auctorum.

1. *Description.*] When the pyrexia attending the acute rheumatism has ceased; when the swelling and redness of the joints are entirely gone, but pains still continue to affect certain joints, which remain stiff, feel uneasy upon motion, changes of weather, or in the night-time only; the disease is then called the *chronic rheumatism*, as it often continues for a very long time.

The limits between the acute and chronic rheumatisms are not always exactly marked. When the pains are still ready to shift their place; when they are especially severe in the night-time; when, at the same time, they are attended with some degree of

pyrexia, and with ſome ſwelling, and eſpecially ſome redneſs, of the joints; the diſeaſe is to be conſidered as partaking of the nature of the acute rheumatiſm. But when there is no longer any degree of pyrexia remaining; when the pained joints are without redneſs; when they are cold and ſtiff; when they cannot eaſily be made to ſweat; or when, while a free and warm ſweat is brought out on the reſt of the body, it is only clammy and cold on the pained joints; and when, further, the pains of theſe are increaſed by cold, and relieved by heat applied to them; the caſe is to be conſidered as that of a purely chronic rheumatiſm; or perhaps more properly the firſt of the conditions now deſcribed may be termed the ſtate of irritability, and the ſecond the ſtate of atony.

The chronic rheumatiſm, or rather the atonic, may affect different joints; but is eſpecially apt to affect thoſe which are ſurrounded with many muſcles, and thoſe of which the muſcles are employed in the moſt conſtant and vigorous exertions. Such is the caſe of the vertebræ of the loins, the affection of which is named *lumbago*; or of the hip-joint, when the diſeaſe is named *iſchias* or *ſciatica*.

Violent ſtrains and ſpaſms occurring on ſudden and ſomewhat violent exertions, bring on rheumatic affections, which at firſt partake of the acute, but very ſoon change into the nature of the chronic, rheumatiſm.—Such are frequently the lumbago, and other affections, which ſeem to be more ſeated in the muſcles than in the joints. The diſtinction of the rheumatic pains from thoſe reſembling them which occur in the ſyphilis and ſcurvy muſt be obvious, either from the ſeat of the pains, or from the concomitant ſymptoms peculiar to thoſe diſeaſes. The diſtinction of the rheumatiſm from the gout will be more fully underſtood from what is laid down under the genus Podagra.

2. *Cauſes*, &c.] The phenomena of the purely chronic rheumatiſm lead us to conclude, that its proximate cauſe is an atony both of the blood-veſſels and of the muſcular fibres of the part affected, together with ſuch a degree of rigidity and contraction in the latter as frequently attend them in a ſtate of atony: and indeed this atony, carried to a certain extent, gives riſe to a ſtate of paralyſis, with an almoſt total loſs of motion in the affected limbs. The paralytic ſtate of rheumatiſm, therefore, may be pointed out as a fourth condition of the diſeaſe, often claiming the attention of the practitioner.

3. *Cure.*] From the view juſt now given of the proximate cauſe of chronic rheumatiſm, the chief indication of cure muſt be, to reſtore the activity and vigour of the part, which is principally to be done by increaſing the tone of the moving fibres, but which may ſometimes alſo be aided by giving condenſation to the ſimple ſolid. When, however, the diſeaſe has degenerated into

the ſtate of paralyſis, the objects to be aimed at are, the reſtoration of a due condition to the nervous energy in the part affected; the obtaining a free circulation of blood through the veſſels of the part; and the removal of rigidity in membranes and ligaments.

For anſwering theſe purpoſes, a great variety of remedies, both external and internal, are had recourſe to. The chief of the external are, the ſupporting the heat of the part, by keeping it conſtantly covered with flannel; the increaſing of the heat of the part by external heat, applied either in a dry or humid form; the diligent uſe of the fleſh-bruſh, or other means of friction; the application of electricity in ſparks or ſhocks; the application of cold water by affuſion or immerſion; the application of eſſential oils of the moſt warm and penetrating kind.

The late Dr. Hugh Smith recommends the following plaſter:

(No. 132.) ℞ Emplaſt. com. cum gum. ʒj.
——— epiſpaſtic. ʒjſs.
Gum. euphorbii pulv. ʒj.
M. ft. emplaſt. ſuper alutam extendend. et loco dolenti applicand.

The application of ſalt brine has proved uſeful; ſo has the employment of the Bath waters or of the vapour baths, either to the body in general or to particular parts; and, laſtly, the employment of exerciſe, either of the part itſelf as far as it can eaſily bear, or by riding or other modes of geſtation.

The internal remedies are, large doſes of eſſential oils drawn from reſinous ſubſtances, ſuch as turpentine; ſubſtances containing ſuch oils, as guiacum; alſo volatile alkaline ſalts.

Dr. Saunders recommends the following formulæ:

(No. 133.) ℞ Guaiaci gummi-reſin. in pulv. trit.
Mithridat. utriuſq. gran. xv.
Terantur ſimul, et ſyrupo aliquo, fiat bolus omni nocte capiendus.

(No. 134.) ℞ Tincturæ guaiac. ammoniat. ʒj. ad ʒſs.
Decocti hordei ʒiv. Miſce.
Fiat Hauſtus bis die ſumendus.

Theſe or ſuch-like medicines are directed to procure ſweat; and calomel, or ſome other preparation of mercury, in ſmall doſes, may be continued for ſome time.

Dr. Hugh Smith treated this diſeaſe in the following way. He ſays, the chronic rheumatiſm is to be remedied by the heating, attenuating, ſudorific medicines.

(No. 135.) ℞ Gum. guaiac. ℈j. (ſolv. vit. ovi)
Adde Aq. cinnam. ten.
——— fontan. aa. ʒvj.
Tinct. guaiac. vol. ʒj.
Syr. croci, ʒjſs.
M. ft. Hauſt. omni nocte hora decubitûs ſumendus.

Vel (No. 136.) ℞ Mercurii calcinat. gr. j. ad gr. ij.
Vini antimonii pulv. ſubtiliſſ. gr. j. ad gr. jß.
Extract. thebaic. gr. ß.
Conſ. cynoſbat. q. ſ. ut ft. bol. omni nocte hor. decubitus ſumend.

(No. 137.) ℞ Pulv. ari comp. ʒß.
Rad. ſerpent. virg. ℈ß.
Syr. croci, q. ſ. ut. ft. bol. man. et veſp. ſumend.

The bark is here likewiſe uſeful.

(No. 138.) ℞ Decoct. cort. Peruv. ʒij.
Tinct. guaiaci vol.
Syr. croci aa ʒj.
M. ft. Hauſt. ſexta vel octava quaque hora ſumend.

The Hauſtus guaiaci of St. George's hoſpital ſeems alſo worthy of attention in this diſeaſe.

(No. 139.) ℞ Guaiaci in pulv. trit. ℈j.
Mucilag. gum. arab. ʒiſs.
Sp. Pimento ʒj.
Aquæ diſtillatæ ʒiſs.
Contere guaiacum cum mucilagine, et adjice aquam.

Alſo the following, from the Pharmacopœia of St. Bartholomew's:

(No. 140.) ℞ Guaiaci gummi-reſinæ pulverati ℈j.
Pulv. ipecacuanhæ comp. gr. x.
Conſ. Cynoſbati q. ſ. Fiat Bolus omni nocte ſumendus.

(No. 141.) ℞ Olei ſuccini rectificati gutt. xx.
Mucilag. arabici gummi ʒſs.
Aquæ pimento ʒiſs.

Tere oleum cum mucilagine, et adde aquam pimento, et fiat Hauſtus ter die ſumendus.

Or the following, employed at St. Thomas's:

(No. 142.) ℞ Gummi guaiaci pulverati
Conſervæ ſambuci ſing. ʒſs.
Syrupi ſimplicis q. ſ. Fiat Bolus omni nocte ſumendus.

Similar compoſitions, employed in other public medical inſtitutions in London, might be ſelected, but the foregoing offer a ſufficient variety to the choice of the practitioner.

Beſides theſe, there are ſeveral narcotic medicines recommended. The cicuta, aconitum, and hyoſciamus, have in particular been highly extolled; and an infuſion of the *rhododendron chryſanthemum* is ſaid to be employed by the Siberians with very great ſucceſs. An account of the Siberian mode of practice is given by Dr. Matthew Guthrie of Peterſburgh, in the fifth volume of the Edinburgh Medical Commentaries, and has been followed with ſucceſs at other places.

The following remarks on the moſt effectual remedies in rheumatic affections appear in the Medical and Phyſical Journal. "There are rheumatic epidemics," ſays the writer, "in which the diſeaſes, although they derive their origin from the ſame ſource, exhibit ſo different and diverſified a form, that it requires the ſagacity of a very attentive obſerver, to diſcover their common origin, their correſponding nature, and conſequently to aſcertain the moſt accurate indications of cure.

"Upon the whole, it deſerves to be remarked, that the effect of the tranſlated rheumatic matter *(metaſtaſis)* may be extremely different, according as it is of an acrid, inflammatory, or phlegmatic nature; according to the conſtitution of the whole body, and the individual condition of the part affected. This matter, or humour (for what elſe can it be called by the nervous and chemical pathologiſt?) generally ſettles on that internal part of the body, which has previouſly been weakened, either naturally, or by diſeaſe, or by other accidental circumſtances. Hence we find that rheumatiſm principally attacks ſuch external parts as have been in a certain degree debilitated by contuſions, wounds, ruptures, diſlocations, ſprains, &c. Hence alſo it happens, that ſuch individuals are ſenſible of every change of the atmoſphere, which affects thoſe parts, and which, as it is ludicrouſly ſaid, converts their bodies into living barometers. To the ſame or ſimilar cauſes it muſt be aſcribed, that in certain anomalous fevers, the diſeaſed matter ſometimes ſettles on thoſe parts which formerly were ſubject to rheumatiſm or eryſipelatous affections, and that the period of the diſeaſe is in this manner determined: ſuch, therefore, may be aptly called critical rheumatiſms.

"The moſt effectual method purſued in the cure of chronic rheumatiſm, whether ariſing from a venereal taint in the conſtitution, or other cauſes, is that recommended by Profeſſor Cerillo of Naples. It principally conſiſts of the following ſimple mercurial ointment, half a drachm of which is to be rubbed in, on the ſole or ſoles of the feet, every evening previous to going to bed:

(No. 143.) ℞ Hydrarg. muriat. ſubtiliſs. pulv. drachm. j.
Axung. porc. Unc. j.
Terantur per hor. un. et dimid. ut fiat Unguentum.

"The efficacy of this remedy we find recorded in the *Journal de Medicine*, tom. LIX; in Dr. Richter's Chirurgical Library (in German), publiſhed at Gottingen, vol. VII. p. 507 and 508.

"According to the accounts given by Drs. Cheyne and Home, a mixture conſiſting of two drachms of ſpirit of turpentine and one ounce of honey, two teaſpoonsful of which were taken every morning and evening, had an uncommon effect in promoting the diſcharge of urine, and relieving, in a few days, a patient who had been afflicted for near a twelvemonth, with that ſpecies of rheumatiſm termed *iſchias*. But Dr. Vogel, of Roſtock, an

eminent writer and practitioner, obſerves, that turpentine will relieve only that particular kind of pain before alluded to, and be of no avail in any other ſpecies of rheumatic affection. Nor does it always operate as a diuretic, and yet afford relief: ſometimes, however, it is attended with no beneficial effects. He further remarks, that the extract of the *aconitum*, with the proper addition of *camphor*, in progreſſive doſes, have *uniformly* proved ſucceſsful in Germany; and that Dr. Herz, a reſpectable phyſician of Berlin, in one caſe, increaſed the doſe of the *aconitum*, *even to half a drachm!* a caſe which almoſt terminated fatally; hence the neceſſity of attending to a certain *maximum* for a doſe, which ought never to be exceeded without the greateſt precaution.

"In the *nervous* iſchias, another foreign practitioner, Mr. Trampel, ſtrongly recommends the uſe of pills made of *ſulph. antim. aur.* and *extr. opii*, in due proportions, to be increaſed to ſuch a doſe as the patient can conveniently bear, and to be continued until all the pains have ſubſided."

Another very remarkable and inſtructive obſervation relative to the treatment of rheumatiſm we cannot withhold from our readers, as it is regiſtered in Vogel's Practical Manual, ſecond edit. (in German) vol. III. p. 447; and in Baldinger's New Magazine, vol. X. No. 2. p. 170.—Singular as it may appear to the ſuperficial obſerver, it cannot be denied that the following proceſs is founded on the eſtabliſhed laws of the animal economy. It merely conſiſts in gently beating the painful part of the hip or loins with a thin piece of whalebone, regularly ſeveral times a day, and immediately after it covering the thigh afflicted with bags containing warm ſand. This remedy is originally derived from an ingenious interpretation of a paſſage in Suetonius, according to whom, the Emperor Auguſtus was relieved *(remedio arenarum atque arundinum)* in a ſimilar manner.

The moſt important and ſatisfactory authors who have treated on this diſeaſe are the following:—*Ballonius*; *Riviere*; *Morgagni*, L. IV. Ep. 57; *Huxham*; *Sydenham*, Sect. VI. Cap. v.; *Stöerck*, Ann ii.; *De Haen*, Tom. IV. Cap. v.; *Van Swieten*, Tom. V.; *Sarcone*; *Pringle*; *Monro*; *Brocklesby*; *Home*; *Baldinger*; *Macbride*; *R. E. Vogel*; *S. G. Vogel*; *Cullen*, *Clark*; *Tiſſot*; *Corrunni*; *Smith*; and particularly *Stoll*, in his Ratio Medendi, Part iii. in the chapter entitled "De Natura et Indole Dyſenteriæ."

Genus XXIII. ODONTALGIA, the Tooth-ach.

Odontalgia, *Sauv.* gen. 198. *Lin.* 45. *Vog.* 145. *Sag.* gen. 157. *Junck.* 25.
Odontalgia ſive rheumatiſmus odontalgicus, *Hoffm.* II. 330.
Odontalgia cariosa, *Sauv.* ſp. 1.

Odontalgia ſcorbutica, *Sauv.* ſp. 4.
Odontalgia catarrhalis, *Sauv.* ſp. 3.
Odontalgia arthritica, *Sauv.* ſp. 6.
Odontalgia gravidarum, *Sauv.* ſp. 2.
Odontalgia hyſterica, *Sauv.* ſp. 3.
Odontalgia ſtomachica, *Sauv.* ſp. 9.

1. *Deſcription.*] This well-known diſeaſe makes its attack by a moſt violent pain in the teeth, moſt frequently in the *molares*, more rarely in the *inciſorii*, reaching ſometimes up to the eyes, and ſometimes backward into the cavity of the ear. At the ſame time there is a manifeſt determination to the head, and a remarkable tenſion and inflation of the veſſels takes place, not only in the parts next to that where the pain is ſeated, but over the whole head.

2. *Cauſes*, &c.] The tooth-ach is ſometimes merely a rheumatic affection, ariſing from cold, but more frequently from a carious tooth. It is alſo a ſymptom of pregnancy, and takes place in ſome nervous diſorders; it may attack perſons at any time of life, though it is moſt frequent in the young and plethoric.

3. *Cure.*] Many empirical remedies have been propoſed for the cure of the tooth-ach, but none have in any degree anſwered the purpoſe. When the affection is purely rheumatic, bliſtering behind the ear will almoſt always remove it; but when it proceeds from a carious tooth, the pain is much more obſtinate. In this caſe it has been recommended to touch the pained part with a hot iron, or with oil of vitriol, in order to deſtroy the aching nerve; to hold ſtrong ſpirits in the mouth; to put a drop of oil of cloves, or an opium pill, into the hollow of the tooth.

But one of the moſt uſeful applications is ſtrong nitrous acid, diluted with three or four times its weight of ſpirit of wine, and introduced into the hollow of the tooth, either by means of an hair pencil or a little cotton. When the conſtitution has had ſome ſhare in the diſeaſe, the Peruvian bark has been recommended, and perhaps with much juſtice, on account of its tonic and antiſeptic powers. When the pain is not fixed to one tooth, leeches, applied to the gum, are of great ſervice. But very often all the foregoing remedies will fail, and the only infallible cure is to draw the tooth, which, as well as the treatment in general, belongs to SURGERY.

GENUS XXIV. PODAGRA, the GOUT.

Podagra, *Vog.* 175. *Boerh.* 1254.
Febris podagrica, *Vog.* 69.
Arthritis, *Sauv.* gen. 183. *Lin.* 60. *Vog.* 139. *Sag.* gen. 142.

Dolor podagricus et arthriticus verus, *Hoffm.* II. 339.
Dolores arthritici, *Hoffm.* II. 317.
Affectus ſpaſtico-arthritici, *Junck.* 46.

Sp. I. The *Regular* GOUT.

Arthritis podagra, *Sauv.* ſp. 1.
Arthritis rachialgica, *Sauv.* ſp. 11.
Arthritis æſtiva, *Sauv.* ſp. 4.

Sp. II. The *Atonic* GOUT.

Arthritis melancholica, *Sauv.* ſp. 6.
Arthritis hiemalis, *Sauv.* ſp. 2.
Arthritis chlorotica, *Sauv.* ſp. 5.
Arthritis aſthmatica, *Sauv.* ſp. 9.

Sp. III. The *Retrocedent* GOUT.

Sp. IV. The *Miſplaced* GOUT.

1. *Deſcription.*] What we call a *paroxyſm of the gout* is principally conſtituted by an inflammatory affection of ſome of the joints. This ſometimes comes on ſuddenly, without any warning, but is generally preceded by ſeveral ſymptoms; ſuch as the ceaſing of a ſweating which the feet had been commonly affected with before; an unuſual coldneſs of the feet and legs; a frequent numbneſs, alternating with a ſenſe of prickling along the whole of the lower extremities; frequent cramps of the muſcles of the legs; and an unuſual turgeſcence of the veins.

While theſe ſymptoms take place in the lower extremities, the body is affected with ſome degree of torpor and languor, and the functions of the ſtomach in particular are more or leſs diſturbed. The appetite is diminiſhed; and flatulency or other ſymptoms of indigeſtion, are felt. Theſe ſymptoms take place for ſeveral days, ſometimes for a week or two, before a paroxyſm comes on; but commonly, upon the day immediately preceding it, the appetite becomes keener than uſual.

The circumſtances of paroxyſms are chiefly the following. They come on moſt commonly in the ſpring, and ſooner or later according as the vernal heat ſucceeds ſooner or later to the winter's cold; and, perhaps, ſooner or later alſo, according as the body may happen to be more or leſs expoſed to viciſſitudes of heat and cold.

The attacks are ſometimes felt firſt in the evening, but more commonly about two or three o'clock in the morning. The pa-

roxyſm begins with a pain affecting one foot, moſt commonly in the ball or firſt joint of the great toe, but ſometimes in other parts of the foot. With the attack of this pain there is commonly more or leſs of a cold ſhivering; which, as the pain increaſes, gradually ceaſes; and is ſucceeded by a hot ſtage of pyrexia, which continues for the ſame time with the pain itſelf. From the firſt attack, the pain becomes, by degrees, more violent, and continues in this ſtate with great reſtleſſneſs of the whole body till next midnight, after which it gradually remits; and, after it has continued for twenty-four hours from the commencement of the firſt attack, it commonly ceaſes almoſt entirely; and, with the coming on of a gentle ſweat, allows the patient to fall aſleep. The patient, upon coming out of his ſleep in the morning, finds the pained part affected with ſome redneſs and ſwelling, which, after having continued for ſome days, gradually abate.

When a paroxyſm has thus come on, although the violent pain after twenty-four hours be conſiderably abated, the patient is not entirely relieved from it. For ſome days he has every evening a return of more conſiderable pain and pyrexia, and theſe continue with more or leſs violence till morning. After going on in this manner for ſeveral days, the diſeaſe ſometimes goes entirely off, not to return till after a long interval.

When the diſeaſe, after having thus remained for ſome time in a joint, ceaſes entirely, it generally leaves the perſon in very perfect health, enjoying greater eaſe and alacrity in the functions of both body and mind than he had for a long time before experienced.

At the beginning of the diſeaſe, the returns of it are ſometimes only once in three or four years: but as it advances, the intervals become ſhorter, and at length the attacks are annual; afterwards they come twice each year; and at length recur ſeveral times during the courſe of autumn, winter, and ſpring; and as, when the fits are frequent, the paroxyſms become alſo longer, ſo in the advanced ſtate of the diſeaſe, the patient is hardly ever tolerably free from it, except perhaps for two or three months in the ſummer.

The progreſs of the diſeaſe is alſo marked by the parts which it affects. At firſt, it commonly affects one foot only; afterwards every paroxyſm affects both feet, the one after the other; and as the diſeaſe proceeds, it not only affects both feet at once, but, after having ceaſed in the foot which was ſecondly attacked, returns again into the firſt, and perhaps a ſecond time alſo into the other. Its changes of place are not only from one foot to another, but from the feet into other joints, eſpecially thoſe of the upper and lower extremities; ſo that there is hardly a joint of the body which, on one occaſion or other, is not affected. It ſometimes affects two different joints at the very ſame time; but

more commonly it is at any one time ſevere in a ſingle joint only, and paſſes in ſucceſſion from one joint to another; ſo that the patient's affliction is often protracted for a great length of time.

When the diſeaſe has often returned, and the paroxyſms have become very frequent, the pains are commonly leſs violent than they were at firſt; but the patient is more affected with ſickneſs, and the other ſymptoms of the atonic gout, which ſhall be hereafter mentioned.

After the firſt paroxyſm of the diſeaſe, the joints which have been affected are entirely reſtored to their former ſuppleneſs and ſtrength; but after the diſeaſe has recurred very often, the joints affected do neither ſo ſuddenly nor entirely recover their former ſtate, but continue weak and ſtiff; and theſe effects at length proceed to ſuch a degree, that the joints loſe their motion entirely.

In many perſons, but not in all, after the diſeaſe has frequently recurred, concretions of a chalky nature are formed upon the outſide of the joints, and for the moſt part immediately under the ſkin. The matter ſeems to be depoſited at firſt in a fluid form, afterwards becoming dry and firm. In their firm ſtate, theſe concretions are a hard earthy ſubſtance, very entirely ſoluble in acids. After they have been formed, they contribute, with other circumſtances, to deſtroy the motion of the joint.

In moſt perſons who have laboured under the gout for many years, a nephritic affection comes on, and diſcovers itſelf by all the ſymptoms which uſually attend calculous concretions in the kidneys, and which we ſhall have occaſion to deſcribe in another place. All that is neceſſary to be obſerved here is, that the nephritic affection alternates with paroxyſms of the gout; and that the two affections, the nephritic and the gouty, are hardly ever preſent at the ſame time. This alſo may be obſerved, that children of gouty or nephritic parents commonly inherit one or other of theſe diſeaſes; but, whether the principal diſeaſe of the parent may have been either gout or nephritis alone, ſome of the children have the one and ſome the other. In ſome of them, the nephritic affection occurs alone, without any gout ſupervening; and this happens to be frequently the caſe with the female children of gouty parents.

In the whole of the hiſtory already given, we have deſcribed the moſt common form of the diſeaſe, and which therefore, however diverſified in the progreſs of it, may be ſtill called the regular ſtate of the gout.—Upon ſome occaſions, however, the diſeaſe aſſumes different appearances: but as we ſuppoſe the diſeaſe to depend always on a certain diatheſis, or diſpoſition of the ſyſtem; to every appearance which we can perceive to depend upon that ſame diſpoſition, we ſtill conſider as a ſymptom and caſe of the gout. The principal circumſtance, in what we term the *regular gout*, is the inflammatory affection of the joints; and whatever ſymptoms

we can perceive to be connected with, or to depend upon, the diſpoſition which produces that inflammatory affection, but without its taking place, or being preſent at the ſame time, we name the *irregular gout*.

Of ſuch irregular gout there are three different ſtates, which may be named the *atonic*, the *retrocedent*, and the *miſplaced* gout.

1. The firſt is, when the gouty diatheſis prevails in the ſyſtem; but, from certain cauſes, does not produce the inflammatory affection of the joints. In this caſe, the morbid ſymptoms which appear are chiefly affections of the ſtomach, ſuch as loſs of appetite, indigeſtion, and its various attendants of ſickneſs, nauſea, vomiting, flatulency, acid eructations, and pains in the region of the ſtomach. Theſe ſymptoms are frequently accompanied with pains and cramps in ſeveral parts of the trunk and the upper extremities of the body, which are relieved by the diſcharge of wind from the ſtomach. Together with theſe affections of the ſtomach, there commonly occurs a coſtiveneſs; but ſometimes a looſeneſs, with colic pains. Theſe affections of the alimentary canal are often attended with all the ſymptoms of hypochondriaſis, ſuch as dejection of mind, a conſtant and anxious attention to the ſlighteſt feelings, an imaginary aggravation of theſe, and an apprehenſion of danger from them.

In the ſame atonic gout, the viſcera of the thorax alſo are ſometimes affected, and palpitations, faintings, and aſthma, occur.

In the head alſo occur head-achs, giddineſs, apoplectic and paralytic affections.

When the ſeveral ſymptoms now mentioned occur in habits having the marks of a gouty diſpoſition, this may be ſuſpected to have laid the foundation of them; and eſpecially when either in ſuch habits, a manifeſt tendency to the inflammatory affection has formerly appeared, or when the ſymptoms mentioned are mixed with and are relieved by ſome degree of the inflammatory gout. In ſuch caſes there can be no doubt of conſidering the whole as a ſtate of the gout.

2. Another ſtate of the diſeaſe we name the *retrocedent* gout. This occurs when an inflammatory ſtate of the joints has, in the uſual manner, come on, but without ariſing to the ordinary degree of pain and inflammation; or at leaſt without theſe continuing for the uſual time, or without their receding gradually in the uſual manner; theſe affections of the joints ſuddenly and entirely ceaſe, while ſome internal part becomes affected. The internal part moſt commonly attacked is the ſtomach; which then is affected with anxiety, ſickneſs, vomiting, or violent pain; but ſometimes the internal part is the heart, which gives occaſion to a ſyncope: ſometimes it is the lungs, which are affected with aſthma; and ſometimes it is the head, giving occaſion to apoplexy or palſy. In all theſe caſes there can be no doubt that the ſymptoms are all

a part of the ſame diſeaſe, however different the affection may ſeem to be in the parts which it attacks.

3. The third ſtate of the irregular gout, which we name the *miſplaced*, is when the gouty diatheſis, inſtead of producing the inflammatory affection of the joints, produces an inflammatory affection of ſome internal part, and which appears from the ſame ſymptoms that attend the inflammations of thoſe parts ariſing from other cauſes.

Whether the gouty diatheſis does ever produce ſuch inflammation of the internal parts without having firſt produced it in the joints, or whether the inflammation of the internal part be always a tranſlation from the joints previouſly affected, we dare not determine; but even ſuppoſing the latter to be always the caſe, we think the difference of the affection of the internal part muſt ſtill diſtinguiſh the *miſplaced*, from what we have named the *retrocedent gout*.

With regard to the miſplaced gout, Dr. Cullen, whom we here follow, tells us, that he never met with any caſes of it in his practice, nor does he find any diſtinctly marked by practical writers, except that of a pneumonic inflammation.

There are two caſes of a tranſlated gout; the one of which is an affection of the neck of the bladder, producing pain, ſtrangury, and a *catarrhus veſicæ*: the other is an affection of the rectum, ſometimes indicated by pain alone in that part, and ſometimes by hæmorrhoidal ſymptoms. In gouty perſons ſuch affections have been known to alternate with inflammatory affections of the joints; but whether theſe belong to the retrocedent or to the miſplaced gout, our author pretends not to determine.

It is commonly ſuppoſed, that there are ſome caſes of rheumatiſm which are ſcarcely to be diſtinguiſhed from the gout: but theſe, Dr. Cullen thinks, are but few; and that the two diſeaſes may be, for the moſt part, diſtinguiſhed with great certainty, by obſerving the predispoſition, the antecedent circumſtances, the parts affected, the recurrences of the diſeaſe, and its connection with the ſyſtem; which circumſtances, for the moſt part, appear very differently in the two diſeaſes.

2. *Cauſes*, &c.] The gout is generally an hereditary diſeaſe: but ſome perſons without any hereditary diſpoſition ſeem to acquire it; and in ſome an hereditary diſpoſition may be counteracted from various cauſes. It attacks the male ſex eſpecially; but it ſometimes, though more rarely, attacks alſo the female. The females liable to it are thoſe of the more robuſt and full habits; and it very often happens to thoſe before the menſtrual evacuation hath ceaſed. Dr. Cullen hath alſo found it occurring in ſeveral females whoſe menſtrual evacuations were more abundant than uſual.

The gout ſeldom attacks eunuchs; and when it does, ſeems to

fall on thoſe who happen to be of a robuſt habit, to lead an indolent life, and to live very full. It attacks eſpecially men of robuſt and large bodies, who have large heads, are of full and corpulent habits, and whoſe ſkins are covered with a thicker *rete mucoſum*, which gives a coarſer ſurface. To ſpeak in the ſtyle of the ancient phyſicians, the gout will ſeldom be found to attack thoſe of a ſanguine, or ſuch as are of a purely melancholic temperament; but very readily thoſe of a *cholerico-ſanguine* temperament. It is, however, very difficult to treat this matter with preciſion. The gout ſeldom attacks perſons employed in conſtant bodily labour, or thoſe who live much upon vegetable aliment. It does not commonly attack men till after the age of thirty-five; and generally not till a ſtill later period. There are indeed inſtances of the gout appearing more early; but theſe are few in compariſon of the others. When the diſeaſe does appear early in life, it ſeems to be in thoſe who have the hereditary diſpoſition very ſtrong, and to whom the remote cauſes hereafter mentioned have been applied in a very conſiderable degree.

As the gout is an hereditary diſeaſe, and affects men particularly of a certain habit, its remote cauſes may be conſidered as prediſponent and occaſional. The prediſponent cauſe, as far as expreſſed by external appearances, has been already marked; and phyſicians have been very confident in aſſigning the occaſional cauſes: but in a diſeaſe depending ſo much upon a prediſpoſition, the aſſigning occaſional cauſes muſt be uncertain; as in the prediſpoſed the occaſional cauſes may not always appear, and in perſons not prediſpoſed they may appear without effect; and this uncertainty muſt particularly affect the caſe of the gout.

The occaſional cauſes of the diſeaſe ſeem to be of two kinds. Firſt, thoſe which induce a plethoric ſtate of the body. Secondly, thoſe which in plethoric habits induce a ſtate of debility. Of the firſt kind are a ſedentary, indolent manner of life, and a full diet of animal food. Of the ſecond kind of occaſional cauſes which induce debility are exceſs in venery; intemperance in the uſe of intoxicating liquors; indigeſtion, produced either by the quantity or the quality of the aliments; much application to ſtudy or buſineſs, night-watching, exceſſive evacuations; the ceaſing of uſual labour; a ſudden change from a very full, to a very ſpare diet; the large uſe of acids and aceſcents; and laſtly, cold applied to the lower extremities. The former ſeem to act by increaſing the prediſpoſition; the latter are commonly the exciting cauſes, both of the firſt attacks, and of the repetitions of the diſeaſe.

With reſpect to the proximate cauſe of the gout, it has generally been thought that it depends on a certain morbific matter always preſent in the body; and that this matter, by certain cauſes, thrown upon the joints or other parts, produces the ſeveral phenomena of the diſeaſe.

This doctrine, however ancient and generally received, appeared to Dr. Cullen to be very doubtful. For,

First, There is no direct evidence of any morbific matter being present in persons disposed to the gout. There are no experiments or observations which show that the blood or other humours of gouty persons are in any respect different from those of others. Previous to attacks of the gout, there appear no marks of any morbid state of the fluids; for the disease generally attacks those persons who have enjoyed the most perfect health, and appear to be in that state when the disease comes on. At a certain period of the disease, a peculiar matter indeed appears in gouty persons; but this, which does not appear in every instance, and which appears only after the disease has subsisted for a long time, seems manifestly to be the effect, not the cause, of the disease. Further, though there be certain acrids which, taken into the body, seem to excite the gout, it is probable that these acrids operate otherwise in exciting the disease, than by affording the material cause of it. In general, therefore, Dr. Cullen thinks, there is no proof of any morbific matter being the cause of the gout.

Secondly, The suppositions concerning the particular nature of the matter producing the gout, have been so various, and so contradictory, as to allow us to conclude, that there is truly no proof of the existence of any of them. With respect to many of these suppositions, they are so inconsistent with chemical philosophy, and with the laws of the animal economy, that they must be entirely rejected.

Thirdly, The supposition of a morbific matter as the cause, is not consistent with the phenomena of the disease, particularly with its frequent and sudden translations from one part to another.

Fourthly, The supposition is further rendered improbable by this, that, if a morbific matter did exist, its operation should be similar in the several parts which it attacks: whereas it seems to be very different, being stimulant, and exciting inflammation, in the joints; but sedative and destroying the tone of the stomach: which, upon the supposition of the same particular matter acting in both cases, is not to be explained by any difference in the part affected.

Fifthly, Some facts alleged in proof of a morbific matter are not sufficiently confirmed; such as those which would prove the disease to be contagious. There is, however, no proper evidence of this, the facts given being not only few, but exceptionable, and the negative observations innumerable.

Sixthly, Some arguments brought in favour of a morbific matter are founded upon a mistaken explanation. The disease has been supposed to depend upon a morbific matter, because it is hereditary. But the inference is not just: for most hereditary dis-

caſes do not depend upon any morbific matter, but upon a particular conformation of the ſtructure of the body tranſmitted from the parent to the offſpring; and this laſt appears to be particularly the caſe in the gout. It may be alſo obſerved, that the hereditary diſeaſes depending upon a morbific matter, appear always much more early in life than the gout commonly does.

Seventhly, The ſuppoſition of a morbific matter being the cauſe of the gout, has been hitherto uſeleſs, as it has not ſuggeſted any ſucceſsful method of cure. Particular theories of gout have often corrupted the practice, and have frequently led from thoſe views which might have been uſeful, and from that practice which experience had approved. Further, though the ſuppoſition of a morbific matter has been generally received, it has been as generally neglected in practice. When the gout has affected the ſtomach, nobody thinks of correcting the matter ſuppoſed to be preſent there, but merely of reſtoring the tone of the moving fibres.

Eighthly, The ſuppoſition of a morbific matter is quite ſuperfluous; for it explains nothing, without ſuppoſing that matter to produce a change in the ſtate of the moving powers; and a change in the ſtate of the moving powers, produced by other cauſes, explains every circumſtance without the ſuppoſition of a morbific matter; and it may be obſerved, that many of the cauſes exciting the gout, do not operate upon the ſtate of the fluids, but directly and ſolely upon that of the moving powers.

Laſtly, Dr. Cullen contends that the ſuppoſition of a morbific matter is ſuperfluous; becauſe, without that, the diſeaſe can be explained, he thinks, in a manner more conſiſtent with its phenomena, with the laws of the animal economy, and with the method of cure which experience has approved. We now proceed to give this explanation; but, before entering upon it, we muſt premiſe ſome general obſervations which Dr. Cullen ſtates.

The firſt obſervation is, that the gout is a diſeaſe of the whole ſyſtem, or depends upon a certain general conformation and ſtate of the body, which manifeſtly appears from the facts above mentioned. But the general ſtate of the ſyſtem depends chiefly upon the ſtate of its primary moving powers; and therefore the gout may be ſuppoſed to be an affection of theſe chiefly.

The ſecond obſervation is, that the gout is manifeſtly an affection of the nervous ſyſtem; in which the primary moving powers of the whole ſyſtem are lodged. The occaſional or exciting cauſes are almoſt all ſuch as act directly upon the nerves and nervous ſyſtem; and the greater part of the ſymptoms of the atonic or retrocedent gout are manifeſtly affections of the ſame ſyſtem. This leads us to ſeek for an explanation of the whole of the diſeaſe, in the laws of the nervous ſyſtem, and particularly in the changes which may happen in the balance of its ſeveral parts.

The third obſervation is, that the ſtomach, which has ſo univerſal a conſent with the reſt of the ſyſtem, is the internal part that is the moſt frequently, and often very conſiderably, affected by the gout. The paroxyſms of the diſeaſe are commonly preceded by an affection of the ſtomach; many of the exciting cauſes act firſt upon the ſtomach, and the ſymptoms of the atonic and retrocedent gout are moſt commonly and chiefly affections of the ſame organ. This obſervation leads us to remark, that there is a balance ſubſiſting between the ſtate of the internal and that of the external parts, and, in particular, that the ſtate of the ſtomach is connected with that of the external parts, ſo that the ſtate of the tone in the one may be communicated to the other.

Theſe obſervations being premiſed, Dr. Cullen offers the following pathology of the gout.

In ſome perſons there is a certain vigorous and plethoric ſtate of the ſyſtem, which at a certain period of life is liable to a loſs of tone in the extremities. This is in ſome meaſure communicated to the whole ſyſtem, but appears more eſpecially in the functions of the ſtomach. When this loſs of tone occurs while the energy of the brain ſtill retains its vigour, the *vis medicatrix naturæ* is excited to reſtore the tone of the parts; and accompliſhes it, by exciting an inflammatory affection in ſome part of the extremities. When this has ſubſiſted for ſome days, the tone of the extremities and of the whole ſyſtem is reſtored, and the patient returns to his ordinary ſtate of health.

This is the courſe of things in the ordinary form of the diſeaſe, which we name the *regular gout*; but there are circumſtances of the body, in which this courſe is interrupted or varied. Thus, when the atony has taken place, if the reaction do not ſucceed, the atony continues in the ſtomach, or perhaps in other internal parts; and produces that ſtate which Dr. Cullen, for reaſons now obvious, named the *atonic gout*.

A ſecond caſe of variation in the courſe of the gout is, when, to the atony, the reaction and inflammation have to a certain degree ſucceeded, but, from cauſes either internal or external, the tone of the extremities and perhaps of the whole ſyſtem is weakened; ſo that the inflammatory ſtate, before it had either proceeded to the degree, or continued for the time, requiſite for reſtoring the tone of the ſyſtem, ſuddenly and entirely ceaſes: whence the ſtomach, and other internal parts, relapſe into the ſtate of atony; and perhaps have that increaſed by the atony communicated from the extremities: all which appears in what has been termed the *retrocedent ſtate of the gout*.

A third caſe of variation from the ordinary courſe of the gout, is, when, to the atony uſually preceding, an inflammatory reaction fully ſucceeds, but has its uſual determination to the joints by ſome circumſtances prevented; and is therefore directed to

ſome internal part, where it produces an inflammatory affection, and that ſtate of things which we have named the *miſplaced gout*.

Though this theory of Dr. Cullen's be ſupported with much ingenuity, yet we may confidently venture to aſſert, that, on this ſubject, he has been leſs ſucceſsful in eſtabliſhing his own opinion, than in combating thoſe of others; and this theory, as well as others formerly propoſed, is liable to numerous and unſurmountable objections. According to the hypotheſis, a vigorous and plethoric habit ſhould in every caſe exiſt prior to the appearance of gout; which is by no means conſiſtent with fact: nor is it true that a vigorous and plethoric habit is liable at a certain age to a loſs of tone in the extremities; which is another neceſſary condition in the hypotheſis. Loſs of tone often occurs in the extremities without exerting any peculiar influence on the ſtomach; and why a loſs of tone in the ſtomach ſhould excite the *vis medicatrix naturæ*, to reſtore it by exciting an inflammatory affection in ſome part of the extremities, is very inconceivable. Were the hypotheſis true, every dyſpeptic patient ſhould infallibly be affected with the gout; which, however, is by no means the caſe. In ſhort, every ſtep in the theory is liable to unſurmountable objections; and it by no means, any more than former hypotheſes, explains the phenomena of the diſeaſe, particularly what Dr. Cullen has himſelf ſo accurately pointed out, the connection of gouty with calculous complaints.

A very ingenious work has lately been publiſhed by an anonymous author, entitled, "a Treatiſe on Gravel and upon Gout;" in which the ſources of each are inveſtigated, and effectual means of preventing or removing theſe diſeaſes recommended. In this treatiſe an attempt is made to prove, that both diſeaſes depend upon a peculiar concreting acid, the acid of calculi, or the *lithic acid*, as it has been ſtyled by ſome. He ſuppoſes this acid, conſtantly preſent to a certain degree in the circulating fluids, to be precipitated by the introduction of other acids; and in this manner he explains the influence of acid wines and other liquors, as claret, cyder, &c. in inducing gout; for he conſiders the circumſtance chiefly conſtituting the diſeaſe as being an inflammation in parts of which the functions have been interrupted by the redundant acid precipitated. Although this theory be ſupported with much ingenuity, yet it is alſo liable to many objections. The ſudden attack of the affection; its ſudden tranſition from one part of the body to another; the inſtant relief of one part when another comes to be affected; and the various anomalous forms which the diſeaſe puts on, having an exact reſemblance to different affections; are altogether irreconcileable to the idea of its depending on any fixed obſtruction at a particular part ariſing from concreting acid. Nor does the plan of prevention and cure which he propoſes, and which conſiſts chiefly in abſtinence from

acid and in the deſtruction of acid, by any means correſpond in every particular to the beſt eſtabliſhed facts reſpecting the treatment of gout; to which we next proceed.

3. *Prevention and treatment.*] In entering upon this, we muſt obſerve, in the firſt place, that a cure has been commonly thought impoſſible: and we acknowledge it to be very probable, that the gout, as a diſeaſe of the whole habit, and very often depending upon original conformation, cannot be cured by medicines, the effects of which are always very tranſitory, and ſeldom extend to the producing any conſiderable change of the whole habit.

It would perhaps have been happy for gouty perſons if this opinion had been implicitly received by them; as it would have prevented their being ſo often the dupes of ſelf-intereſted pretenders, who have either amuſed them with inert medicines, or have raſhly employed thoſe of the moſt pernicious tendency. Dr. Cullen, who has treated of the cure of the diſeaſe with great judgment, as he has done the theory with much ingenuity, is much diſpoſed to believe the impoſſibility of a cure of the gout by medicines; and more certainly ſtill inclined to think, that, whatever may be the poſſible power of medicines, yet no medicine for curing the gout has hitherto been found. Although almoſt every age has preſented a new remedy, all hitherto offered have, very ſoon after, been either neglected as uſeleſs, or condemned as pernicious.

But, though unwilling to admit the power of medicines, yet he contends, that a great deal can be done towards the cure of the gout by a regimen: and he is firmly perſuaded, that any man who, early in life, will enter upon the conſtant practice of bodily labour, and of abſtinence from animal-food, will be preſerved entirely from the diſeaſe.

Whether there be any other means of radically curing the gout, the doctor is not ready to determine. There are hiſtories of caſes of the gout, in which it is ſaid, that by great emotions of the mind, by wounds, and by other accidents, the ſymptoms have been ſuddenly relieved, and never again returned; but how far theſe accidental cures might be imitated by art, or would ſucceed in other caſes, is at leaſt extremely uncertain.

The practices proper and neceſſary in the treatment of the gout, are to be conſidered under two heads; *firſt*, As they are to be employed in the intervals of paroxyſms; or, *ſecondly*, As during the time of them. In the intervals of paroxyſms, the indications are, to prevent altogether the return of paroxyſms; or at leaſt to render them leſs frequent, and more moderate. During the time of paroxyſms, the indications are, to moderate the violence and ſhorten the duration of them as much as can be done with ſafety.

It has been already obſerved, that the gout may be entirely prevented by conſtant bodily exerciſe, and by a low diet; and Dr. Cullen is of opinion, that this prevention may take place even in perſons who have an hereditary diſpoſition to the diſeaſe. Even when

the diſpoſition has diſcovered itſelf by ſeveral paroxyſms of inflammatory gout, he is perſuaded that labour and abſtinence will abſolutely prevent any returns of it for the reſt of life. Theſe, therefore, are the means of anſwering the firſt indication to be purſued in the intervals of paroxyſms.

Exerciſe in perſons diſpoſed to the gout, in Dr. Cullen's opinion, has effect by anſwering two purpoſes: one of theſe is the ſtrengthening of the tone of the extreme veſſels; and the other, the guarding againſt a plethoric ſtate. For the former, if exerciſe be employed early in life, and before intemperance has weakened the body, a very moderate degree of it will anſwer the purpoſe; and, for the latter, if abſtinence be at the ſame time obſerved, little exerciſe will be neceſſary.

With reſpect to exerciſe, this in general is to be obſerved, that it ſhould never be violent; for if violent, it cannot be long continued, and muſt always endanger the bringing on an atony in proportion to the violence of the preceding exerciſe.

It is alſo to be obſerved, that the exerciſe of geſtation, though conſiderable and conſtant, will not, if it be entirely without bodily exerciſe, anſwer the purpoſe in preventing the gout. For this end, therefore, the exerciſe muſt be in ſome meaſure that of the body; and muſt be moderate, but at the ſame time conſtant and continued through life.

In every caſe and circumſtance of the gout in which the patient retains the uſe of his limbs, bodily exerciſe, in the intervals of paroxyſms, will be always uſeful; and in the beginning of the diſeaſe, when the diſpoſition to it is not yet ſtrong, exerciſe may prevent a paroxyſm which otherwiſe might have come on. In more advanced ſtates of the diſeaſe, however, when there is ſome diſpoſition to a paroxyſm, much walking will bring it on; either as it weakens the tone of the lower extremities, or as it excites an inflammatory diſpoſition in them; and thus it ſeems to be that ſtrains or contuſions often bring on a paroxyſm of the gout.

Abſtinence, the other part of the proper regimen for preventing the gout, is of more difficult application. If an abſtinence from animal food be entered upon early in life, while the vigour of the ſyſtem is yet entire, Dr. Cullen has no doubt of its being both ſafe and effectual: but if the motive for this diet ſhall not have occurred till the conſtitution has been broken by intemperance, or by the decline of life, a low diet may then endanger the bringing on an atonic ſtate.

Further, if a low diet be entered upon only in the decline of life, and be at the ſame time a very great change from the former manner of living, the withdrawing of an accuſtomed ſtimulus of the ſyſtem may readily throw this into an atonic ſtate.

The ſafety of an abſtemious courſe may be greater or leſs according to the management of it. It is animal food which eſpecially diſpoſes to the plethoric and inflammatory ſtate, and that

food is to be therefore especially avoided; but, on the other hand, vegetable aliment, of the lowest quality, is in danger of weakening the system too much by not affording sufficient nourishment, and more particularly of weakenin; the tone of the stomach by its acescency. It is therefore a diet of a middle nature that is to be chosen; and milk is precisely of this kind, as containing both animal and vegetable matter.

As approaching to the nature of milk, and as being a vegetable matter containing the greatest portion of nourishment, the farinaceous seeds are next to be chosen, and are the food most proper to be joined with milk.

With respect to drink, fermented liquors are useful only when they are joined with animal food, and that by their acescency; and their stimulus is only necessary from custom. When, therefore, animal food is to be avoided, fermented liquors are unnecessary; and by increasing the acescency of vegetables, these liquors may be hurtful. The stimulus of fermented or spirituous liquors is not necessary to the young and vigorous, and when much employed impairs the tone of the system. These liquors, therefore, are to be avoided, except so far as custom and the declining state of the system may have rendered them necessary. For preventing or moderating the regular gout, water is the only proper drink.

With respect to an abstemious course, it has been supposed, that an abstinence from animal food and fermented liquors, or the living upon milk and farinacea alone for the space of one year, might be sufficient for a radical cure of the gout: and it is possible that, at a certain period of life, in certain circumstances of the constitution, such a measure might answer the purpose. But this is very doubtful; and it is more probable, that the abstinence must, in a great measure, be continued, and the milk diet be persisted in, for the remainder of life. It is well known, that several persons who had entered on an abstemious course, and had been thereby delivered from the gout, have, however, upon returning to their former manner of full living, had the disease return upon them with as much violence as before, or in a more irregular and more dangerous form.

It has been alleged, that, for preventing the return of the gout, blood-letting by scarifications of the feet, frequently repeated, and at stated times, may be practised with advantage; but of this Dr. Cullen tells us he has had no experience: and the benefit of the practice is not, as far as we know, confirmed by the observation of any other practitioner.

Exercise and abstinence are the means of avoiding the plethoric state which gives the disposition to the gout; and are therefore the means proposed for preventing the paroxysms, or at least for rendering them less frequent and more moderate. But many circumstances prevent the steadiness necessary in pursuing these measures;

and therefore, in such cases, unless great care be taken to avoid the exciting causes, the disease may frequently return; and, in many cases, the preventing of paroxysms is chiefly to be obtained by avoiding those exciting causes already enumerated.

A due attention in avoiding these different causes will certainly prevent fits of the gout; and the taking care that the exciting causes be never applied in a great degree, will certainly render fits more moderate when they do come on. But, upon the whole, it will appear, that a strict attention to the general conduct of life, is in this matter necessary; and therefore, when the predisposition has taken place, it will be extremely difficult to avoid the disease.

Dr. Cullen is firmly persuaded, that, by obviating the predisposition, and by avoiding the exciting causes, the gout may be entirely prevented; but, as the measures necessary for this purpose will, in most cases, be pursued with difficulty, and even with reluctance, men have been very desirous to find a medicine which might answer the purpose without any restraint on their manner of living. To gratify this desire, physicians have proposed, and, to take advantage of it, empirics have feigned, many remedies. Of what nature several of these remedies have been, it is difficult to say: but of those which are unknown, we conclude, from their having been only of temporary fame, and from their having soon fallen into neglect, that they have been either inert or pernicious, and therefore shall make no enquiry after them; and shall now remark only upon one or two known remedies for the gout which have been in vogue.

One of these is what has been named in England the *Portland powder*. This is not a new medicine, but is mentioned by Galen, and, with some little variation in its composition, has been mentioned by the writers of almost every age since that time. It appears to have been at times in fashion, and to have again fallen into neglect; and Dr. Cullen thinks that this last has been owing to its having been found to be, in many instances, pernicious. An attempt to revive the use of it having been lately made in London by a Mr. Whitehead, who, notwithstanding the palpable evidence of a *nostrum* and *handbill*, lays some claim to reputation as a *regular* practiser of medicine, we cannot withhold from our readers some very excellent remarks on this attempt published by Dr. Fothergill, of Bath, in the Medical and Physical Journal.

After stating that a printed paper had been put into his hands, subscribed D. Whitehead, recommending "a revival of the old remedy for the gout, known by the name of the *Portland powder*," which is pretended to have undergone some improvement, Dr. Fothergill proceeds thus:

"As the effects of this preparation have long been recognized by professional persons as injurious and mischievous, and as the authorities cited in the paper which recommends it, are much misrepresented and perverted, I wish to lay before the public

what I apprehend to be the true ſtate of the caſe, and to caution mankind againſt the trial of a remedy at once ſo deceitful and ſo dangerous. From what is ſaid in the paper above alluded to, we ſhould be led to believe that this remedy was purchaſed and diſperſed by the *preſent* Duke of Portland; whereas, it was by his father, many years ago. The preſent nobleman owes his amendment, and indeed his recovery from this painful complaint, to a meritorious and ſteady adherence to an abſtemious and regular courſe of diet, which conſiſts nearly of vegetable ſubſtances; the mixture of animal food being very ſmall, and that of the mildeſt kind: to this is joined a total abſtinence from all fermented liquors; and it is to this judicious management, and not to any medicine, either regularly preſcribed or empirically recommended, that he aſcribes his freedom from this hereditary malady. The powder which the late duke took himſelf, and of which he directed copies of the compoſition, and the manner of its preparation, to be given gratuitouſly to all who deſired it, is as follows:

Receipt for the PORTLAND POWDER.

"Take Ariſtolochia rotunda (or birthwort), gentian, root; Germander, ground pine, centaury, tops and leaves.

"Of all theſe, well dried, powdered and ſifted as fine as you can, mix equal weight well together, and take one drachm of this mixed powder every morning faſting, in a cup of wine and water, broth, tea, or any other vehicle you like beſt; keep faſting an hour and half after it. Continue this for three months without interruption; then diminiſh the doſe to three-fourths of a drachm for three months longer; then to half a drachm for ſix months more, taking it regularly every morning if poſſible. After the firſt year, it will be ſufficient to take half a drachm every other day. As this medicine operates inſenſibly, it will perhaps take two years before you receive any great benefit, ſo you muſt not be diſcouraged, though you do not perceive at firſt any great amendment; it works ſlow, but ſure; it doth not confine the patient to any particular diet, ſo one lives ſoberly, and abſtains from thoſe meats and liquors that have always been accounted pernicious in the gout, as Champaigne, drams, high ſauces, &c.

"N.B. In the rheumatiſm that is only accidental, and not habitual, a few of the drachm doſes may do; but if habitual, or of long duration, then you muſt take it as for the gout:—the remedy requires patience, as it operates but ſlow in both diſtempers."

"The ingenious and learned Dr. John Clephane has given an excellent account of this very ancient preparation, in the firſt volume of the Medical Obſervations and Enquiries. It is

mentioned, he obſerves, with very little variation from the above receipt, by Galen in the ſecond century; by Cælius Aurelianus (from Soranus), who lived about the ſame time; by Actius Alexander Trallianus in the fifth century; by Paulus Ægineta in the ſeventh century; by Myrepſus in the twelfth; by Franciſcus de Pedemontio, A.D. 1400; by the Prince of Mirandola, about 1480; by Fournefort in later times; and at a period ſtill later, it was transferred into the Paris Pharmacopœia, under the title of Pulvis Arthriticus Amarus.

"This powder was given in the doſe of about a drachm, daily, for a year; as many of thoſe remedies called antidoti were, and theſe directions are nearly copied in thoſe given for the uſe of the Portland powder, ſave that the latter is directed to be perſiſted in for a longer time.

"But though it cannot be denied that the ancient writers recommended, in ſome caſes, theſe bitter preparations as remedies for the gout, yet they adviſed them with conſiderable reſerve, and an apprehenſion of their danger.

"Soranus, who adviſed them, cautions againſt their being long continued; as, he ſays, they brought on ſome perſons acute complaints; on others, apoplexy; on others, pleuriſy and peripneumony; and in ſome caſes, difficulty of breathing, or dyſpnœa.

"All of the writers on the ſubject, caution againſt the indiſcriminate uſe of it in all caſes and habits, as they aſſure us that they are extremely hurtful in hot and bilious habits, and proper only in cold phlegmatic conſtitutions. They alſo judged them to be very dangerous in caſes of long ſtanding, and adviſe no trial of them to be made where the complaint has exiſted *five*, or at moſt *ſeven* years.

"Such is the abſtract of the accounts given of this remedy by the writers of antiquity. Let us now turn to the modern accounts, and particularly to that of the celebrated Dr. Cullen, who is vouched as evidence of the fact by Mr. Whitehead; wherein it will appear, with what impropriety, and under what miſrepreſentation, this admirable phyſician has been introduced as encouraging a practice he always reprobated in his converſation, as I can teſtify, and in his writings, which are open to the peruſal of every one.

"'In every inſtance,' ſays Dr. Cullen, in his Practice of Phyſic, 'which I have known of its exhibition for the length of time preſcribed, the perſons who had taken it were, indeed, afterwards free from any inflammatory affection of the joints; but they were afterwards affected with many ſymptoms of the atonic gout, and *ail*, ſoon after finiſhing their courſe of the medicine, have been attacked with apoplexy, aſthma, or dropſy, which proved fatal.'

" In a later publication of the ſame eminent writer, he obſerves, that 'the effects of this powder in modern times, have been very much on the ſame footing with the ancient. It is poſſible,' ſays he, 'that ſeveral perſons may have taken the Portland powder, and other bitters, with ſeeming great advantage; but I have not had opportunity to know the ſequel of the whole of ſuch perſons' lives, ſo as to ſay poſitively how far, in any caſe, the cure continued ſteady for a life of ſome years after, or what accidents happened to their health.

" 'But I have had occaſion to know, or to be exactly informed, of the fate of nine or ten perſons who had taken this medicine for the time preſcribed, which is two years. Theſe perſons had been liable for ſome years before to have a fit of regular or very painful inflammatory gout, once at leaſt, and frequently twice, in the courſe of a year; but after they had taken the medicine for ſome time, they were quite free from any fit of inflammatory gout, and particularly when they had completed the courſe preſcribed, had never a regular fit, or any inflammation of the extremities, for the reſt of their life.

" 'In no inſtance, however, that I have known, was the health of theſe perſons tolerably entire. Soon after finiſhing the courſe of their medicine, they became valetudinary in different ſhapes, and particularly were much afflicted with dyſpeptic and what are called nervous complaints, with lowneſs of ſpirits. *In every one of them*, before a year had paſſed after finiſhing the courſe of the powders, ſome hydropic ſymptoms appeared, which gradually increaſing in the form of an aſcites or hydrothorax, eſpecially the latter, joined with anaſarca, in leſs than two or at moſt three years proved fatal.

" 'Theſe accidents happening to perſons of ſome rank, became very generally known in this country, and has prevented all ſuch experiments ſince.' Such are the words of Dr. Cullen; and the reader will, I am certain, join with me in cenſuring the diſingenuous perverſion of them in the printed paper alluded to*. Had the whole of the paſſages I have cited been inſerted into Mr. Whitehead's recommendation of the remedy, who could have imagined Dr. Cullen could be introduced as bearing teſtimony in favour of its uſe? But the real opinion of Dr. Cullen is ſuppreſſed, and only ſo much of the effects of the powder is inſerted on his authority, as may ſerve the purpoſe of perſuading thoſe

* " This celebrated remedy, ſince its introduction into England, is acknowledged by the moſt eminent of the faculty to be capable of removing the paroxyſms of the gout; and we may freely conclude the teſtimony of the celebrated Dr. Cullen, of Edinburgh, undeniable evidence of the fact."
Mr. Whitehead's Advertiſement, or Hand-bill, Page 1.

who have not had an opportunity of knowing his real sentiments. In justice to him, and to mankind, I now lay them before the public; and I am confident the candid and benevolent part of the world will think me fully justified in publishing this caution in the use of a remedy of this character. But its ill effects were not known to our own countrymen only; Werlhoff, a German practitioner of eminence, and first physician to his late majesty for the electorate of Hanover, agrees in condemning these bitter remedies for the gout. After saying that the return of the painful paroxysms is thereby prevented, he adds, 'that by the excessive use of these bitter remedies, he has known the digestive power of the stomach to be so weakened, as to produce a loss of appetite, and proper concoction of the food, which has accelerated the death, instead of restoring the health, of those who had used them, who thus paid the severe penalty attendant on the trial of these unlucky and mischievous remedies*.'

"Murray, the Gottingen professor, gives in his Apparatus Medicamentum a similar account; and adds, 'that the powder poduced, in many instances, apoplexy, palsy, and acute disorders, together with difficulty of breathing, a dry cough, and tubercles of the lungs, which proved suddenly mortal†.'

"The reputation of this medicine having declined before I had any opportunity of observing its effects at the time of taking, and its mischievous consequences having prevented its having many living vouchers of its success, I cannot say any thing of it from my own experience. I remember, indeed, one person far advanced in years, who was I believe a Proctor in the Ecclesiastical Court at York, who was pointed out to me as a remarkable instance of one who had survived the effects of this remedy. He appeared in good health, and had not I believe experienced any ill effects from the powder. But this is, as far as my information goes, a solitary instance, and no more to be depended on as an encouragement to the trial of the remedy than an extraordinary case of excess in spirituous liquors, which still did not appear to abridge life, or injure health, would be to encourage the indulging in that odious and poisonous beverage."

* Sed ex nimio horum amaricantium usu, fermentum stomachi adeo debilitatum esse memini, ut nonnuli appetitum amiserint, cibos non concoxerint, mortem hinc petius. quam sanitatem accelerarint; malique ex infausti remedii fœvas dederint pœnas. Werlhoff, Caut. Medicæ, Page 346.

† Ex pulvere arthritico multi apoplexiam, paralysin, vel morbos acutos, senes præcipue, contraxerunt, Et in homine quodam, arthritis quidem inde fedata, sed respiratio difficilis, tussis sicca, morsque subitanea successit, tuberculis pulmonum post mortem conspicuis. Murray, Vol. I. page 355.

Another remedy which has had the appearance of preventing the gout, is an alkali in various forms; ſuch as the fixed alkali, both mild and cauſtic, lime-water, ſoap, and abſorbent earths: and of late the *alkaline aerated water* has been more faſhionable than any other. When fixed alkali is preferred, the *Aqua kali* of the London Pharmacopœia may be exhibited in the doſe of from twenty to forty or ſixty drops twice a-day in a cup of water-gruel. Since it became common to exhibit theſe medicines in nephritic and calculous caſes, it has often happened that they were given to thoſe who were at the ſame time ſubject to the gout; and it has been obſerved, that under the uſe of theſe medicines, gouty perſons have been longer free from the fits of their diſeaſe. That, however, the uſe of theſe medicines has entirely prevented the returns of gout, Dr. Cullen does not know; becauſe he never puſhed the uſe of them for any long time, being apprehenſive that they might produce a hurtful change in the ſtate of the fluids.

As the preventing the gout depends very much on ſupporting the tone of the ſtomach, and avoiding indigeſtion; ſo coſtiveneſs, by occaſioning this, is very hurtful to gouty perſons. It is therefore neceſſary for ſuch perſons to prevent or remove coſtiveneſs, and by a laxative medicine, when needful; but it is at the ſame time proper, that the medicine employed ſhould be ſuch as may keep the belly regular, without much purging. Magneſia, oleum ricini, or flowers of ſulphur, may be employed, as the one or the other may happen to be beſt ſuited to particular perſons, but aloes or rhubarb are ſtill better. Thus, the end may be anſwered by (No. 7.), or the following from the Pharmacopœias of Guy's, St. Thomas's, and Bartholomew's hoſpitals:

(No. 144.) ℞ Vini aloes ℥iv.
Syrupi papaver. alb. ℥ſs.
Salis cornu cervi ℈ij.
Miſce fiat Miſtura. Detur cochleare unum nocte.

(No. 145.) ℞ Saponis ℈j.
Rhabarb. in pulv. trit. gr. v.
Miſce ſyrupo, ut fiat Bolus ter quotidie ſumendus.

(No. 146.) ℞ Aloes ſuccot. pulv. ʒij.
Extracti glycyrrhizæ incis. ʒvj.
Spiritus vinoſi tenuioris.
Aquæ puræ ſing. ℥iv.
Digere in calore arenæ per horas xij. ſubinde agitans; dein ſeponatur et poſtquam fœces ſubſiderint, effundatur liquor purus et filtretur reliquus.
Doſis, a drachmâ ad unciam horâ ſomni.

Or the following, known by the name of *Boerhaave's Gout Cordial:*

(No. 147.) ℞ Rhabarb. in pulv. trit. ʒj.
Fol. ſennæ. ʒij.
Sem. Cardam. } contus. ſing. ʒj.
Sem. Coriand. }
Croci
Coccinellæ ſing. ʒij.
Uvæ paſs. ʒiij.
Sp. Vini Gall. lib. j.
Digere et cola. Detur cochl. iv. pro re nata.

Dr. Saunders directs the adminiſtration of Oleum Ricini in the following way:

(No. 148.) ℞ Ol. e ſemin. ricini
Vitell. Ovi recent. ſing. ʒſs.
His rite terendo ſubactis, adde paulatim,
Aq. cinnam. vel
Aq. Menth. pip. ʒiſs. ut fiat Hauſtus quamprimum ſumendus.

Or the following preparation of Rhubarb from the ſame, may be properly employed in gouty caſes:

(No. 149.) ℞ Rhabarb. in pulv. trit.
Magnes. uſt. utriuſq. ʒij.
Cinnam. cort. contuſ. ʒj.
Aquæ ferventis ʒx.

Magneſia et rhabarbaro prius ritè contritis, in vaſe idoneo macera, et liquorem cola; dein adde
Tincturæ cort. aurant. ʒj.
Sumantur coch. iij. hora ante prandium quotidie.

Theſe are the ſeveral meaſures to be purſued in the intervals of the paroxyſms; and we are next to mention the meaſures proper during the time of them.

As during the time of paroxyſms the body is in a feveriſh ſtate, no irritation ſhould then be added to it; every part, therefore, of the antiphlogiſtic regimen, except the application of cold, ought to be ſtrictly obſerved.

Another exception to the general rule may occur when the tone of the ſtomach is weak, and when the patient has been before much accuſtomed to the uſe of ſtrong drink; for then it may be allowable, and even neceſſary, to give ſome animal food and a little wine.

That no irritation is to be added to the ſyſtem during the paroxyſms of gout, except in the caſes mentioned, is agreed upon among phyſicians: but it is a more difficult matter to determine, whether, during the time of paroxyſms, any meaſures may be purſued to moderate the violence of reaction and of inflammation. Dr. Sydenham has given it as his opinion, that the more violent the inflammation and pain, the paroxyſm will be the

ſhorter, as well as the interval between the preſent and the next paroxyſm longer: and, if this opinion be admitted as juſt, it will forbid the uſe of any remedies which might moderate the inflammation; which is, to a certain degree, undoubtedly neceſſary for the health of the body. On the other hand, acute pain preſſes for relief; and although a certain degree of inflammation may ſeem abſolutely neceſſary, it is not certain but that a moderate degree of it may anſwer the purpoſe; and it is even probable, that in many caſes the violence of inflammation may weaken the tone of the parts, and thereby invite a return of paroxyſms. It ſeems to be in this way, that, as the diſeaſe advances, the paroxyſms become more frequent.

From theſe laſt conſiderations, it ſeems probable, that, during the time of paroxyſms, ſome meaſures may be taken to moderate the violence of the inflammation and pain, and particularly, that in firſt paroxyſms, and in the young and vigorous, blood-letting at the arm may be practiſed with advantage: but this practice cannot be repeated often with ſafety; becauſe blood-letting not only weakens the tone of the ſyſtem, but may alſo contribute to produce plethora. However, bleeding by leeches on the foot, and upon the inflamed part, may be practiſed and repeated with greater ſafety; and inſtances have been known of its having been employed with ſafety to moderate and ſhorten paroxyſms; but how far it may be carried, we have not had experience enough to determine.

Beſides blood-letting and the antiphlogiſtic regimen, it has been propoſed to employ remedies for moderating the inflammatory ſpaſm of the part affected, ſuch as warm bathing and emollient poultices. Theſe have ſometimes been employed with advantage and ſafety; but, at other times, have been found to give occaſion to a retroceſſion of the gout.

Bliſtering is a very effectual means of relieving and diſcuſſing a paroxyſm of the gout; but has alſo frequently had the effect of rendering it retrocedent. The ſtinging with nettles is analogous to bliſtering; and probably would be attended with the ſame danger. The burning with moxa *, or other ſubſtance, is

* Moxa is the *Mugwort* of China, a ſoft lanuginous ſubſtance prepared in Japan from a ſpecies of *Artemiſia* (little differing from our common Mugwort), by beating the dried leaves and rubbing them between the hands till the downy part can be ſeparated.

It is famous in the Eaſt for curing the gout, and as a ſpecies of actual cautery in other caſes, and is uſed in the following manner: "A little cone of the Moxa is laid upon the part, previouſly moiſtened, and ſet on fire at the top. It burns down with a temperate glowing heat, and produces a dark-coloured ſpot, the exulceration of which is promoted by applying a little garlic. The ulcer is left to diſcharge, or is ſoon healed, according to the intention in uſing the moxa."

a remedy of the ſame kind: but though not found hurtful, there is no ſufficient evidence of its proving a radical cure.

Camphire, and ſome aromatic oils, have the power of allaying the pain, and of removing the inflammation from the part affected: but theſe remedies commonly make the inflammation only ſhift from one part to another, and therefore with the hazard of its falling upon a part where it may be more dangerous; and they have ſometimes rendered the gout retrocedent.

From theſe reflections it will appear, that ſome danger muſt attend every external application to the parts affected during a paroxyſm; and that therefore the common practice of committing the perſon to patience and flannel alone, is eſtabliſhed upon the beſt foundation. Opiates give the moſt certain relief from pain; but, when given in the beginning of gouty paroxyſms, it has by ſome been thought that they occaſion theſe to return with greater violence. When, however, the paroxyſms ſhall have abated in their violence, but ſtill continue to return, ſo as to occaſion painful and reſtleſs nights, opiates may be given with ſafety and advantage; eſpecially in the caſe of perſons advanced in life, and who have been often affected with the diſeaſe. When, after paroxyſms have ceaſed, ſome ſwelling and ſtiffneſs ſtill remain in the joints, theſe ſymptoms are to be diſcuſſed by the diligent uſe of the fleſh-bruſh. Purging immediately after a paroxyſm will be always employed with the hazard of bringing it on again.

Thus far of the *regular* gout. We now proceed to conſider the management of the diſeaſe when it has become *irregular*.

Treatment of the irregular Gout.

There are three ſpecies of irregular gout, namely, the *atonic*, the *retrocedent*, and the *miſplaced*, as has been already obſerved.

1. In the *atonic* gout, the cure is to be accompliſhed by carefully avoiding all debilitating cauſes; and by employing, at the ſame time, the means of ſtrengthening the ſyſtem in general, and the ſtomach in particular.

For ſtrengthening the ſyſtem in general, Dr. Cullen recommends frequent exerciſe on horſeback, and moderate walking. Cold-bathing alſo may anſwer the purpoſe; and may be ſafely employed, if it appear to be powerful in ſtimulating the ſyſtem, and be not applied when the extremities are threatened with any pain.

For ſupporting the tone of the ſyſtem in general, when threatened with atonic gout, ſome animal food ought to be employed, and the more aceſcent vegetables ought to be avoided. In the ſame caſe, ſome wine alſo may be neceſſary; but it ſhould be in

moderate quantity, and of the leaſt aceſcent kinds; and if every kind of wine ſhall be found to increaſe the acidity of the ſtomach, ardent ſpirits and water muſt be employed.

For ſtrengthening the ſtomach, bitters and the Peruvian bark may be employed; but care muſt be taken that they be not conſtantly employed for any great length of time.

The following will anſwer the purpoſe very well:

(No. 150.) ℞ Tinct. cinchonæ comp.
Tinct. gentianæ comp. ſing. ʒij.
Miſce Detur coch. j. bis die.

The moſt effectual medicine for ſtrengthening the ſtomach is iron, which may be employed under various preparations; but the beſt appears to be the ruſt in fine powder, which may be given in large doſes. The electuarium cinchonæ cum ferro of Guy's Hoſpital is in this caſe very ſuitable:

(No. 151.) ℞ Cinchonæ in pulv. trit. ʒij.
Chamæmeli in pulv. trit. ʒiſs.
Ferri rubiginis ℈j.
Syrupi ſimplicis q. s. Miſce fiat Electuarium.
Detur drach. ij. bis terve indies:

Or the following:

(No. 152.) ℞ Myrrhæ in pulv. trit. ʒj.
Kali præparati ʒſs.
Ferri vitriolati gr. xij.
Mucilaginis arabici gummi ʒij.
Decocti glycyrrhizæ ʒviſs.
Spiritus pimento ʒj.
Tere myrrham et ferrum vitriolatum cum kali et mucilagine, donec perfecte commiſceantur, dein adde reliqua. Detur cochl. ij. ad iv. bis terve indies.

For ſupporting the tone of the ſtomach, aromatics may be employed; but ſhould be uſed with caution, as the frequent and copious uſe of them have an oppoſite effect; and they ſhould therefore be given only in compliance with former habits, or for palliating preſent ſymptoms. They are indeed moſt proper joined with the bark.

The mixture (No. 52.), or the following from the Pharmacopœia of Guy's hoſpital, are very ſuitable for this purpoſe:

(No. 153.) ℞ Confect. aromat. ʒij.
Aquæ menth. piper. ℥viij. M. fiat Miſtura.

Or the following from the formulæ of Dr. Nankivel:

(No. 154.) ℞ Raphan. ruſtic.
Sem. ſinap. contus. ſing. ℥ij.
Aquæ bullien. ℔ij. Fiat infuſio. Detur unc. quatuor ter die.

(No. 155.) ℞ Sinap. in pulv. trit.
Conſ. Roſæ ſing. ʒj.
Syr. zinziber. q. s. ut fiat Electuarium.
Detur drach. j. vel ij. bis die.

When the ſtomach happens to be liable to indigeſtion, gentle vomits may be frequently given, and proper laxatives ſhould be always employed to obviate or to remove coſtiveneſs; ſuch as (No. 3. or 19.)

In the atonic gout, or in perſons liable to it, to guard againſt cold is eſpecially neceſſary; and the moſt certain means of doing this, is by repairing to a warm climate during the winter ſeaſon. In northern ſituations, the wearing of fleecy hoſiery is of great conſequence, or at leaſt flannel, univerſally next the ſkin. In the more violent caſes, bliſtering the lower extremities may be uſeful; but that remedy ſhould be avoided when any pain threatens the extremities. In perſons liable to the atonic gout, iſſues may be eſtabliſhed in the extremities as in ſome meaſure a ſupplement to the diſeaſe.

2. A ſecond caſe of the irregular gout is the *retrocedent*.

When this affects the ſtomach and inteſtines, relief is to be inſtantly attempted by the free uſe of ſtrong wines, joined with aromatics, and given warm: or, if theſe ſhall not prove powerful enough, ardent ſpirits muſt be employed, and are to be given in a large doſe. In moderate attacks, ardent ſpirits, impregnated with garlic or with aſafœtida, may be employed; or, even without the ardent ſpirits, a ſolution of aſafœtida, with the volatile alkali, may anſwer the purpoſe. Opiates are often an effectual remedy; and may be joined with aromatics, as in the electuarium opiatum; or they may be uſefully joined with volatile alkali and camphire. Muſk has likewiſe proved uſeful in this diſeaſe, and may be given in the uſual form preſcribed by the London College; or in the following by Dr. Saunders:

(No. 156.) ℞ Moſch.
Caſtor. Ruſſic. utriuſq. in pulv. trit. ʒj.
Conſ. Cynoſbat. ʒj. Fiant Boli numero duo, quorum alter mane, alter veſperi ſumatur, ex Miſturæ camphoratæ unciis duabus.

When the affection of the ſtomach is accompanied with vomiting, this may be encouraged, by taking draughts of warm wine, at firſt with water and afterwards without it; having at length recourſe, if neceſſary, to ſome of the remedies above mentioned, and particularly to opiates.

In like manner if the inteſtines be affected with diarrhœa, this is to be at firſt encouraged by taking plentifully of weak broth; and when this ſhall have been done ſufficiently, the tumult is to be quieted by opiates.

When the retrocedent gout ſhall affect the lungs, and produce

aſthma, this is to be cured by opiates, by antiſpaſmodics, and perhaps by bliſtering on the back or breaſt.

When the gout, leaving the extremities, ſhall affect the head, and produce pain, vertigo, apoplexy, or palſy, our reſources are very precarious. The moſt probable means of relief is, bliſtering the head; and, if the gout ſhall have receded very entirely from the extremities, bliſters may be applied to theſe alſo. Together with theſe bliſterings, aromatics, and the volatile alkali, may be thrown into the ſtomach.

3. The third caſe of the irregular gout is the *miſplaced*; that is, when the inflammatory affection of the gout, inſtead of falling upon the extremities, falls upon ſome internal part. In this caſe, the diſeaſe is to be treated by blood-letting, and by ſuch other remedies as would be proper in an idiopathic inflammation of the ſame parts.

Whether the tranſlation ſo frequently made from the extremities to the kidneys, is to be conſidered as an inſtance of the miſplaced gout, ſeems uncertain: but Dr. Cullen is diſpoſed to think it ſomething different; and therefore is of opinion, that, in the *nephralgia calculoſa* produced upon this occaſion, the remedies of inflammation are to be employed no farther than they may be otherwiſe ſometimes neceſſary in that diſeaſe, ariſing from other cauſes than the gout.

Where the ſigns of inflammation are inconſiderable, and no particular circumſtances ſeem to forbid its uſe, the *Bolus ad arthriticos* of Guy's hoſpital may be had recourſe to.

(No. 157.) ℞ Mellis gr. xxxvj.
Ol. Terebinth. gutt. x. ad xxiv. Miſce, et fiat Bolus bis die ſumendus.

Or the following directed by Dr. Nankivel:

(No. 158.) ℞ Sem. dauci ſylveſt.
Bacc. Junip. contus. ſing. ʒij.
Aquæ bullientis lib. j. Digere et cola. Doſis unc. ij. omni nocte.

To this diſſertation on the gout, taken from the works of our late learned profeſſor, we cannot help ſubjoining a very uncommon caſe, publiſhed by Dr. Samuel Pye in the London Medical Tranſactions, where the gout would ſeem to have been occaſioned by a morbific matter, and to have been cured by the evacuation of it.

"Mr. Major Rook, ſurgeon and apothecary in Upper Shadwell, of about forty-five years of age, a ſober, temperate man, of a good habit of body, accuſtomed to no diſeaſe but the gout; the returns of the fits whereof had never been more frequent than once in twelve or fourteen months; about the month of June, 1752, was ſeized with a very ſevere paroxyſm of the gout. As

I had known some extraordinary effects proceeding from a vegetable diet in that distemper, particularly in one gentleman, who, by a total abstinence from all manner of food except cows' milk, and that without bread, had cured himself of this disease; and who, at the time I mentioned the case to my friend, was in the 13th year of his milk diet; I persuaded Mr. Rook to try what vegetables would do for him: he readily complied, and entered upon it immediately, with a resolution, that, if it answered his expectation, he would renounce fish and flesh for ever.

"But, after the most religious abstinence from animal food of every kind for eleven weeks, being visited by a gentle attack in both feet, he returned immediately to his animal food. This paroxysm continued but forty-eight hours; but in March, 1723, was succeeded by a very severe one in both feet.

"The pain in his feet, heels, and ancles, increased with great violence for about ten or twelve days; till at length he was in the most extreme agonies; such as he had never felt before, and such as almost made him mad. In the height of this extremity, the pains (it is his own expression) from the feet, heels, and ancles, flew as quick as lightning directly to the calves of his legs; but remaining there not half a minute, and not in the least abating of their extreme violence (though the feet, heels, and ancles, were left entirely free from pain), from the calves, after a short stay of about half a minute, the pains ascended with the same velocity as before to both the thighs, at the same time leaving the calves of the legs free from pain; from the thighs, in less than the space of one minute, and as quick as before, they arrived at the abdomen; and after giving the patient one more severe twitch in the bowels, they reached the stomach: here the pains and here the fit ended, upon the patient vomiting up about a pint and a half of a green aqueous liquor, but so extremely corrosive, that he compared it to the strongest mineral acid.

"This extraordinary crisis happened at about two in the morning: immediately after this discharge he fell asleep, and slept till seven or eight, and waked perfectly easy in every part, no signs of the distemper remaining but the swelling and tenderness of his feet; both of which went off gradually, so that in two days he was able to walk about his business.

"The next fit seized him in February, 1754, in the common way, but was less violent than the former, and continued for about six weeks; during which time he had three increased paroxysms, or distinct smart fits, which held him about two hours each; in the last of which he had the same critical discharge, by vomiting of the same corrosive matter, preceded by the same uncommon symptoms as in the fit of 1753. But mending every hour, he was able the very next day to walk, and attend his patients,

with more eaſe than after the firſt-mentioned fit; for the ſwelling abated much ſooner, and in three days diſappeared.

" I have ſaid, that this laſt fit was attended with three diſtinct paroxyſms, the laſt of which ended as above: yet to ſhew the diſpoſition of Nature, in this caſe, to throw off the offending humour in this her new way, it is remarkable, that in the two firſt of theſe increaſed paroxyſms of pain, the patient declared to me that he never had the leaſt eaſe till he had vomited; but as there was no tranſlation of the pain before theſe vomitings, there was none of that corroſive matter to be diſcharged; nothing but the common contents of the ſtomach was to be ſeen. Theſe vomitings, however, procured the patient ſome eaſe; but the fit of the gout went on till the third paroxyſm was over, which ended as has been related.

" As the criſis in this caſe is uncommon, I muſt take notice of a ſymptom or two, which were no leſs extraordinary, in both theſe fits of the gout.

" A moſt profuſe ſweat attended the patient every morning during the whole courſe of the fits; which was ſo very offenſive, and at the ſame time his breath ſo uncommonly ſtinking, that neither the patient himſelf, nor thoſe who waited on him, were ever ſenſible of the like.

" His linen was tinged as with ſaffron; and his urine very high coloured, of almoſt as deep a red as claret: but, upon the critical vomitings, every one of theſe ſymptoms diſappeared with the diſeaſe.

" On the 9th of December, 1755, he was attacked again in one foot. The ſymptoms, however, were ſo very mild, that he took no notice of them to his family till the 12th: from that day the pain was aggravated, and the ſwelling greatly increaſed by walking, and riding in a coach. On the 17th it became extremely violent, particularly in the heel; when it inſtantaneouſly left the parts affected, and in the ſame manner, and with equal velocity (as in the two former fits), it flew into the calves of his legs, thighs, and abdomen; and when it had reached the ſtomach, it cauſed him to vomit the ſame kind of corroſive acid as in the two former fits; and though the quantity was no more than a teaſpoonful, he became perfectly well in two days.

" The ſame ſymptoms of fetid urine, and offenſive ſweats, attended the patient in this ſhort paroxyſm as in thoſe of 1753 and 1754: the ſweat continued but two nights, and the urine fetid only forty-eight hours.

" As Mr. Rook had experienced ſo great and happy effects from the former critical vomitings, he was greatly diſappointed upon finding the quantity evacuated ſo very ſmall; for which reaſon he immediately attempted to increaſe it, by drinking three pints of warm water (which was at hand), but in vain; for nei-

ther that, nor the uſe of his finger, could provoke to an evacuation, which was begun and finiſhed by nature; for though the quantity evacuated was ſo very ſmall, yet as it was equally corroſive, and produced the ſame effect, the diſcharge muſt be accounted as truly critical as the others were.

"During the firſt of theſe fits, in the year 1752, a hard tumor had appeared on the ſide of the metatarſus near the middle of the right foot, which continued till after the third critical vomiting; when it was reſolved, and totally diſappeared, upon the diſcharge of a viſcid matter like the white of an egg, with a few ſmall chalk ſtones from the end of the middle toe of the ſame foot. This diſcharge happened about four or five days before the patient was ſeized with a regular fit in April, 1755. But it is to be remarked, that this laſt fit continued three or four weeks, and went off in the common way, without any of the critical diſcharges of vomiting, urine, or ſweat; but left on one hand three, and on the other two, fingers loaded with chalk-ſtones; with this peculiar ſymptom, that when the weather was cold thoſe fingers were affected with a moſt exquiſite pain, which was always removed by heat.

"But not long after this laſt-mentioned fit, a large quantity of chalk-ſtones were extracted from the bottom of the left foot, near the ball of the great toe, and that from time to time for about three or four months. On the 19th of January, 1756 (the wound occaſioned by the chalk-ſtones being ſtill open), he was ſeized with a fever, without any ſymptom of the gout; the fever went off on the third day, with the ſame kind of critical ſweat and urine as always accompanied the acid vomitings in the fore-mentioned fits. On the fourth day from the attack of the fever, a fit of the gout came on, with the common ſymptoms, in both feet; which continued with violence for about a week, with frequent retching and vomiting, but without bringing up more than the common contents of the ſtomach. At this time an uncommon itching in the bottom of the foot and ball of the great toe from whence the chalk ſtones had been extracted, tormented the patient for five or ſix hours; upon his gently rubbing the part, he was very ſenſible of a fluctuation of ſome matter, which ſoon appeared to flow at firſt in ſmall quantities from the open orifice in the ball of the toe: upon preſſing the part, about a teacupful of a liquid chalky matter was collected. The next morning the patient made a large opening with an impoſthume knife, which produced more than half a pint of a bloody ſerous matter, full of chalk-ſtones, which proved as truly critical as the vomitings of the corroſive acid did in the caſes above mentioned; for the orifice from whence the chalk-ſtones firſt iſſued was very ſoon healed, and the gentleman continues in perfect health."

END OF VOLUME I.

T. Davison, White-Friars.

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